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TEST OF A PSYCHOSOCIAL STRAIN MODEL OF DELINQUENCY
FOR MEXICAN AMERICAN YOUTH

by

Jose de Jesus Rodriguez

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Psychology

Approved:

UTAH STATE UNIVERSITY
Logan, Utah

2003

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ABSTRACT

Test of a Psychosocial Strain Model of Delinquency
for Mexican American Youth

by

Jesus de Jesus Rodriguez, Master of Science

Utah State University, 2003

Major Professor: Dr. Susan L. Crowley
Department: Psychology

The purposes of this study were twofold: (1) to compare rates of delinquency between Mexican American and European American adolescents, and (2) to test the application of a model of delinquency designed to be especially relevant to Mexican American adolescents. The study is one of the first attempts to advance knowledge about delinquency among Mexican American adolescents through the development and test of a comprehensive model of delinquency. The model constructed as part of this study—labeled the psychosocial strain model—was unique in that it integrated variables from different theoretical perspectives and its construction was guided by knowledge of cultural and demographic characteristics of Mexican Americans. The study used data from the National Longitudinal Study of Adolescent Health (Add Health), a large and nationally representative sample of adolescents. Analyses indicated that Mexican

American adolescents engaged in a disproportionate amount of delinquency. Mexican American adolescents also tended to engage in delinquency at a greater and more serious level than European American adolescents. Results of path analysis used to test the psychosocial strain model revealed that the model explained a statistically significant amount of the variance in delinquency for both males and females. However, not all paths in the model were statistically significant. In addition, the results revealed important gender differences in the applicability of the model. Implications of the study findings and future research directions are discussed.

(114 pages)

DEDICATION

This thesis is dedicated to all of America's youth who have been forgotten in detention centers across the nation. May you find the strength and courage to persevere.

ACKNOWLEDGMENTS

This research uses data from Add Health, a program project designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris, and funded by a grant P01-HD31921 from the National Institute of Child Health and Human Development, with cooperative funding from 17 other agencies. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Persons interested in obtaining data files from Add Health should contact Add Health, Carolina Population Center, 123 W. Franklin Street, Chapel Hill, NC 27516-2524 (www.cpc.unc.edu/addhealth/contract.html).

The writing of this thesis was a long and arduous process that could not have been completed without the help of several individuals. To them, I would like to extend my sincerest gratitude. First, I would like to thank Dr. Susan L. Crowley for her commitment to my success as a graduate student. Dr. Crowley's guidance and understanding have been instrumental not only for the completion of this project but also for the progress I have made throughout graduate school. I would also like to thank Dr. Melanie Domenech-Rodriguez for her enormous support and for being such a great Latina role model. In addition, I am grateful to Dr. Brent C. Miller for his input as a committee member and for providing me with access to the Add Health data set. Further, I would like to thank Dr. Xitao Fan for getting me started on this project.

También le quiero dar las gracias a mis padres y hermanos por el amor que me han brindado y por estar siempre conmigo; especialmente a mi madre, Josefina Mendoza,

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CHAPTER I

INTRODUCTION

Statement of the Problem

Juvenile delinquency is a serious problem in the United States. Although official data suggests that delinquency rates have declined in recent years, juvenile delinquents still account for a substantial portion of crimes committed in the United States every year (Snyder, 2000). For example, in 1999 juveniles were responsible for 12% of all violent crimes and 22% of all property crimes committed in the United States. In addition, juvenile delinquency places a great economic burden on society (Cohen, 1998). It is estimated that a single juvenile criminal career costs society \$1.5 to \$1.8 million over the course of six years.

A particularly concerning trend is the disproportionate rate of delinquency engaged in by individuals from certain U.S. ethnic minority groups. For example, official and self-report data indicate that the number of crimes committed by African American and Native American youth every year is usually disproportionately higher than their respective population sizes (Uniform Crime Reports, 2000). Official rates of delinquency cannot be established for Latino youth because of the combining of their data with that of European Americans. However, evidence from self-report studies conducted with Latinos (Rodriguez, 1988; Valdez, Nourjah, & Nourjah, 1988) and rates of Latino adolescents in juvenile detention centers (Wordes & Bynam, 1994) suggest that this group of individuals is also disproportionately overrepresented in juvenile delinquency.

Nevertheless, few studies exist that have explicitly attempted to establish rates

of delinquency for Latino adolescents, and those that do exist are several years old. Current knowledge about rates of delinquency among Latino youth must be inferred primarily from statistics gathered from juvenile detention centers, which have the potential of underestimating actual rates of delinquency (Loeber, Farrington, & Waschbusch, 1998). Thus, although there is some evidence that Latino adolescents are disproportionately represented in delinquency, data from current self-report studies of delinquent behavior would provide a clearer picture of the degree of delinquency engaged in by Latino adolescents.

Several explanations have been offered for the disproportionate rate of delinquency involvement by individuals from ethnic minority groups (Chambliss, 1994; Hawkins, 1993; Vega, Gil, Warheit, Zimmerman, & Apospori, 1993). However, most of these explanations have focused on African Americans, and relatively fewer studies have attempted to explain Latino adolescents' decisions to engage in delinquency. Yet, the fact that Latinos represent the fastest growing U.S. ethnic minority group and the indication that they are overrepresented in delinquency, warrants the need for research on the development of delinquency among this group.

Explanations of delinquency tend to focus either on individual predictors (e.g., the relationship between socioeconomic inequality and delinquency), or on examination of more comprehensive models. The bulk of the empirical research, however, has been at the level of individual predictors. Although representing an important line of inquiry, this research is limited by the fact that delinquency is a complex phenomenon with a multitude of factors underlying its etiology. Ultimately, tests of comprehensive models

are more likely to yield a better understanding of delinquency than research at the individual predictor level. Therefore, the present study attempted to expand the literature on delinquency through the development and test of a model designed to be particularly useful in explaining the delinquency of Mexican American youth—a specific Latino subgroup.

Development and Description of the Psychosocial Strain Model

The construction of the model used in this study was guided by the following criteria: (a) the model needed to integrate variables from different theoretical perspectives; (b) because it was desired that the model be especially pertinent to Mexican American adolescents, it needed to include variables derived from knowledge of the milieu of Mexican Americans; and (c) the model needed to include variables that have generally been shown to be important predictors of delinquency, as long as these fit into a model that was primarily based on the demographic and cultural characteristics of Mexican Americans. Reasons for using these criteria in constructing the model are discussed below.

The first criterion was selected because theory and research on delinquency suggests that integrated models provide better accounts of delinquency than models derived from a single theoretical perspective (Elliot, Huizinga, & Ageton, 1985). The fact that no theory to date has been able to fully account for the development of delinquency indicates that delinquency is a complex phenomenon with many factors

contributing to its etiology, which supports the development of integrated models of delinquency. In addition, by not being restricted to variables that adhere to a single theoretical perspective, integrated models of delinquency allow for the inclusion of variables that will make the model more applicable to a particular group.

A second criterion used was that the model include variables derived from knowledge of the demographic and cultural milieu of Mexican Americans so as to increase the sensitivity of the model for this group. Demographic characteristics suggest that, as a group, Mexican Americans tend to experience a great deal of economic hardship. Specifically, statistics gathered by the U.S. Bureau of the Census reveal that Mexican Americans tend to have lower than average levels of income and education and greater than average levels of poverty (Therrien & Ramirez, 2000). This suggests that socioeconomic status is likely to be an important variable in explaining the development of delinquency among individuals from this group. In the cultural domain, Mexican Americans have been characterized as having a strong orientation toward the family. This emphasis on the family has been referred to as *familismo* and often manifests as loyalty towards the family, unity among family members, and reliance on the family for support (Marin & VanOss-Marin, 1990). Thus, in addition to socioeconomic status, familismo is also likely to be an important factor in explaining the development of delinquency among Mexican American youth.

Finally, several research studies conducted primarily with European American adolescents have highlighted the importance of certain variables, either as direct or indirect predictors of delinquency. These variables include peer delinquency,

socioeconomic status, and attachment to parents. Thus, it was deemed important to include these variables in the model even if evidence for their value as predictors has come primarily from studies conducted with European American adolescents. While there exists less empirical support for emotional distress as a predictor of delinquency than some of the aforementioned variables, theoretical formulations and empirical evidence support its inclusion in a model of delinquency for Mexican Americans.

The model constructed for this study was guided by the aforementioned criteria. The model included four predictor variables: socioeconomic status (SES), attachment to parents (a proxy measure of familismo), emotional distress, and adolescents' perceptions of peer substance use. The model was labeled the *psychosocial strain model* because it integrates variables from psychological and sociological perspectives and holds that strain is the key operative mechanism that moves an adolescent down a path toward delinquency. Specifically, the psychosocial strain model suggests that low SES (economic strain) leads to a disruption in family functioning (familial strain) as measured by the level of connectedness between parents and adolescents (attachment to parents). In turn, because of the centrality of the family in Mexican culture, low attachment to parents is hypothesized to result in increased levels of emotional distress (intrapersonal strain) and to push adolescents towards involvement with delinquent peers. Finally, lower levels of connectedness between parents and adolescents, high levels of emotional distress, and associating with delinquent peers are all hypothesized to have a direct influence on adolescent delinquency. Results of previous studies using the variables included in the

psychosocial strain model supported their inclusion and temporal ordering within the model.

Given previous research which demonstrating that males engage in substantially higher rates of delinquency than females (e.g., Steffensmeier & Allan, 1996), it was deemed important to test the psychosocial strain model separately for males and females. Indeed, the finding that males engage in more delinquency than females is one of the most robust in all of the literature on crime and delinquency. In their attempts to explain this gender difference in rate of involvement in delinquency, researchers have speculated that different factors may be involved in the development of male and female delinquency. Differences in the way boys and girls are socialized, for example, has been advanced as one of the key factors underlying the gender-based difference in rates of delinquency. There is some evidence that Mexican Americans tend to adhere to more traditional gender roles than European Americans, thus making the gender socialization explanation particularly relevant to this group.

Purpose of the Study

Due to the paucity of self-report studies establishing rates of delinquency for Latino adolescents—despite some evidence which indicates that this group may be over-represented in delinquency—one purpose of the study was to compare rates of delinquency between Mexican American and European American youth. A second purpose was to test the psychosocial strain model's ability to explain the delinquency of Mexican American youth. Data for this study came from the National Longitudinal Study of

Adolescent Health (Add Health), a large study designed to investigate the effects of social and familial environments on the health-related behaviors of adolescents (Bearman, Jones, & Udry, 1997). The following are the specific research questions addressed in this study:

1. Do Mexican American adolescents show greater and disproportionate levels of delinquency than European American adolescents?
2. Does the psychosocial strain model adequately explain delinquency involvement by Mexican American adolescents?
3. Does the model yield different results based on gender, or does it apply equally well to male and female Mexican American youth?

CHAPTER II

REVIEW OF THE LITERATURE

Official data indicates that rates of juvenile crime have steadily decreased over the past decade. Between 1990 to 1999 total juvenile arrest rates for Crime Index offenses decreased by approximately 20%. More specifically, Violent Crime Index offenses—murder, forcible rape, robbery, and aggravated assault—fell approximately 5%, while Property Crime Index offenses—burglary, larceny-theft, motor vehicle theft, and arson—fell approximately 23% (Uniform Crime Reports, 2000). Although the recent trends in overall officially recorded levels of juvenile crime are encouraging, juvenile delinquency continues to be a problematic social issue. In 1999, for example, juveniles still accounted for 12% of all violent crimes and 22% of all property crimes cleared by arrests (Snyder, 2000). The magnitude of this problem is highlighted when one considers that a single juvenile criminal career (1-4 crimes per year) costs society an estimated \$83,000 to \$334,000 annually. If the juvenile continues his criminal career into adulthood (10.6 crimes per year over 6 years), the total estimated cost to society is between \$1.5-\$1.8 million (Cohen, 1998).

A particularly concerning trend is the high level of juvenile offenses committed by adolescents from ethnic minority groups. Official data reveals disproportionately higher rates of delinquency for African American and Native American youth (Uniform Crime Reports, 2000); rates for Latino youth cannot be established using official statistics because of the lumping of these youth with European American youth. Evidence from self-reported studies and official records of incarcerated individuals, however, also

demonstrate a disproportionate rate of involvement in criminal behavior by Latinos (Rodriguez, 1988; Valdez et al., 1988; Wordes & Bynum, 1994).

Still, although much attention has been given to the disproportionate rate of involvement in delinquency by individuals from ethnic minority groups, few efforts have been made to establish rates of delinquency for Latino adolescents and to compare them with those of other ethnic groups. Current knowledge about rates of delinquency for Latinos must be inferred from relatively old self-report studies (Rodriguez, 1988; Valdez et al., 1988), or from statistics of Latinos in juvenile detention centers (Wordes & Bynum, 1994). While these sources provide useful information, they are either outdated, or have the potential of yielding imprecise estimates of Latino adolescent delinquency involvement. There is evidence, for example, that many adolescents who engage in a high rate of delinquent behavior, as assessed through self-report measures, have no prior record of arrests (Loeber et al., 1998), suggesting that official statistics may underestimate actual rates of delinquency. Therefore, although there is reason to believe that Latino adolescents are disproportionately represented in delinquency, there is a need for current self-report data to further clarify this issue.

Researchers have offered several explanations for the overrepresentation of ethnic minority individuals in juvenile delinquency. The most common of these explanations include biased arresting and prosecuting practices by law enforcement agencies (Chambliss, 1994), socioeconomic inequality (Hawkins, 1993), and cultural adjustment difficulties (Vega et al., 1993). However, most of these explanations have focused on African American adolescents and considerably less effort has been made to explain the

disproportionate rate of delinquency involvement by Latino adolescents. This is somewhat surprising given that Latinos adolescents represent one of the largest and fastest growing U.S. ethnic minority groups (Guzman, 2000). While it can be argued that the same explanations for African Americans apply to Latinos, it can also be said that the cultural experiences of these ethnic groups are distinct enough to warrant separate explanations for each group. Thus, given the large and increasing number of Latino adolescents and the indication that they are at risk for delinquency, there is a need for research specifically designed to understand the factors that contribute to the development of delinquency among this group.

Research on delinquency has tended to focus either on the relationship between individual predictors and delinquency or on the construction and testing of comprehensive models of delinquency. The bulk of the existing research, however, has been at the individual predictor level. That is, predictors are examined in isolation for their ability to account for delinquency of adolescents from ethnic minority groups. This line of research represents an important initial step in explaining ethnic disparities in rates of delinquency. However, given that delinquency has multiple causes, research at the individual predictor level is inherently limited. For example, even if research were to convincingly show that SES was at the root of ethnic disparities in rates of delinquency, this still does not tell us through what mechanisms SES exerts its influence and eventually leads to the over-representation of certain ethnic minority groups in delinquency. The purpose of the present study, therefore, was to develop and test a comprehensive model of delinquency for Mexican American adolescents. The reason for

the focus on Mexican Americans is discussed in a subsequent section.

It is argued in this thesis that a model designed to explain the delinquency of Mexican American adolescents should include three critical attributes. First, the model should integrate variables from different theoretical perspectives. Second, the model should incorporate variables derived from knowledge of Mexican American life. Finally, the model should also incorporate variables that have been consistently shown to be important in understanding delinquency, even if these have not yet been tested with individuals of Mexican descent.

The main goals of the review that follows are to detail the construction of such a model while at the same time highlighting why these aforementioned attributes are important. The review will be conducted in five sections. The first section contains a definition of juvenile delinquency. In the second section, a description of several major theories of delinquency is provided. The goals of this section are to describe the theoretical origins of the variables used to construct the model and to highlight the rationale for constructing a model that integrates variables from different theoretical perspectives. The third section provides a description of the population, demographic, and cultural characteristics of Mexican Americans. In addition to painting a general picture of the status of Mexican Americans in the U.S., this section highlights some of the demographic and culturally relevant factors that helped guide the construction of the model. The fourth section contains a detailed review of empirical research that supports the inclusion and temporal ordering of the variables in the model. This review of studies also highlights some of the variables included in the model that have been consistently

shown to be important predictors of delinquency. The model is presented in the final section.

Delinquency Defined

The term juvenile delinquency is commonly used to refer to a nonadult who has engaged in behavior that is in violation of social norms. Applying this definition, however, would result in a large number of children and adolescents being classified as juvenile delinquents because even minor deviations from the norms of society (e.g., an unusual style of dress) could qualify as juvenile delinquency; thus, a narrower definition is desired. In reaching a more concise definition, two separate questions need to be answered: (a) what constitutes a “juvenile,” and (b) what constitutes a delinquent act? The more generally accepted answers to these questions have been established by the courts.

First, several states have established the age of 10 years as the minimum age at which a individual can be held legally responsible for his or her behavior (Task Force on Juvenile Justice and Delinquency Prevention, 1977; cited in Kratcoski & Kratcoski, 1996). In addition, every state has an upper age limit for juveniles. Although the upper age limit can vary from state to state, most states use the age of 17 years. Second, the courts typically define a delinquent act as any behavior for which a juvenile can be brought to the attention of the court (Kratcoski & Kratcoski). Most states make a distinction between delinquent and status offenses. A *delinquent offense* is any act committed by a juvenile for which an adult can also be arrested, such as theft. A *status*

offense is defined as any act for which only an juvenile can be arrested, such as running away from home (Kratcoski & Kratcoski); harsher sanctions are usually administered for delinquent relative to status offenses. Combining these two definitions, the common legal definition of juvenile delinquency is any act for which an individual between the ages of 10 to 17 can be arrested.

Thus, throughout the remainder of this thesis the term “juvenile delinquency”—used interchangeably with delinquency—is used to refer to any behavior committed by an individual between the ages of 10 and 17 years, identified either through official records or self-reports, which, if detected, could have resulted in legal sanctions by the court. This includes a wide range of behaviors including, but not limited to, minor theft, fighting, use of illicit drugs, and armed robbery.

Theoretical Perspectives on Delinquency

A logical first step in the construction of a model of delinquency is the examination of existing models. Models of delinquency abound in the social science literature. Initial efforts at model construction were primarily theory driven. That is, models were developed to directly test the tenets of a given theoretical perspective. Influential in these initial attempts at theory construction were the biological, psychological, and sociological perspectives. As research began to accumulate on models derived from these different perspectives, it became possible to determine the strengths and limitations of each. Knowledge of strengths and limitations of individual theories, in turn, led to the integration of different theoretical perspectives into more comprehensive

models of delinquency with the hope that integrated models would provide a better explanation of delinquency (Aultman & Wellford, 1979; Messner, Krohn, & Liska, 1989). In this section several theoretical perspectives on delinquency are reviewed. In addition to revealing the theoretical origins of the variables used to construct the model for this study, the review will underscore the reason for the desire to develop an integrated model of delinquency for Mexican Americans.

Biological Perspectives of Delinquency

Early biological theorists explained delinquency as being due to internal biological mechanisms that were present at birth and genetically passed from parents to children. Examples of research in this area include *somatotype* and *inheritance* based biological explanations of delinquency. The somatotype approach to investigating the causal link between biological mechanisms and delinquency consists of classifying individuals on one of three body types--endomorphs (plump), mesomorphs (muscular), or ectomorphs (frail)--and assessing the relationship between body type and delinquency (e.g., Glueck & Glueck, 1950; Sheldon, 1949). Similarly, inheritance explanations of delinquency have been tested through studies investigating delinquency concordance rates between different pairs of genetically related individuals, such as monozygotic twins, dizygotic twins, and nontwin siblings (Reid, 1979; Rowe, 1985; Rowe & Farrington, 1997).

Recent biological theories of delinquent behavior have focused less on establishing a direct relationship between biological factors and delinquency. Instead,

suggesting that biological mechanisms predispose individuals to delinquency, but do not inevitably cause delinquency. An example of one such theory is Rowe's (1996) *adaptive strategy theory* of crime and delinquency. According to this theory, human beings evolve a set of behaviors designed to increase the likelihood of reproductive success, thus ensuring the continuation of the species. Rowe referred to the collection of these behaviors as a strategy. The innate drive to procreate in adaptive strategy theory is divided into two components: mating effort and parenting effort. Mating effort refers to energy invested in finding a mate, while parenting effort refers to energy invested in rearing the young. Rowe has posited that mating effort involves strong sexual drive, lack of emotional attachment, and high levels of aggression. These factors also tend to underlie the motivation to engage in crime and delinquency. Thus, crime and delinquency, according to Rowe, results from "an evolved behavioral strategy that maximizes mating effort and minimizes parenting effort" (p. 270). Further, Rowe has posited that the link between biological mechanisms (i.e., mating and parenting effort) and delinquency is mediated by social and ecological variables. Although Rowe's theory allows for the interaction between biology and environment, at its core it is still a biological theory of delinquency.

Psychological Perspectives on Delinquency

Psychological perspectives focus on individual psychological variables (e.g., personality traits) in explaining delinquency. Theorists from this school tend to view delinquency as the outward manifestation of underlying psychological disturbances. This perspective differs from both biological and sociological ones in terms of the proximal

delinquency as the outward manifestation of underlying psychological disturbances. This perspective differs from both biological and sociological ones in terms of the proximal explanation of delinquency that is emphasized. That is, although psychological perspectives allow for the influence of biological and environmental factors on the etiology of psychological problems, the emphasis is placed on how psychological problems directly affect the development of delinquency.

Sigmund Freud's theory of psychoanalysis was one of the first psychological perspectives to be applied to the understanding of delinquency. According to the psychoanalytic point of view, human development is innately driven by sexual and aggressive impulses for which the individual desires immediate gratification. As the individual progresses through life, however, society imposes limits on the means of attaining gratification for these impulses. A healthy personality is characterized by the development of important personality structures and defense mechanisms that help the individual mediate between innate impulses and societal constraints. Thus, from the psychoanalytic perspective delinquency is seen as the result of an underdeveloped *superego*—a personality structure that represents the internalized rules and norms of society. An underdeveloped superego results in an inability to effectively control impulses, which, in turn, leads to delinquent behavior. Although psychoanalytic explanations of delinquency were very popular at one point in time, their popularity seems to have subsided mainly as a result of a lack of objectivity of the theory (Shoemaker, 1996).

Principles from behaviorism and social learning theory have also been applied to

the explanation of delinquency. Notable in this regard has been the work of sociologists Burgess and Akers (Akers, 1977; Burgess & Akers, 1966). These researchers modified Sutherland's (1947) original *differential association theory* by incorporating principles of behaviorism and social learning into the theory. In its original form, differential association theory posits that delinquency is learned through interactions with individuals from intimate personal groups who expose the individual to definitions and techniques favorable to deviance. According to Sutherland, it is an excess of acquired definitions favorable to deviance that is the direct cause of delinquent behavior. However, Burgess and Akers saw a need to modify Sutherland's original conception because it failed to specify the mechanisms underlying the learning of delinquent behavior. To address this limitation, they drew on the principles of behaviorism and social learning theory and developed the *differential association-reinforcement theory*. According to their reformulated theory, delinquency is the result of behavior that is learned primarily through operant conditioning. More specifically, delinquency results when individuals learn, from close others, definitions, techniques, and attitudes, that are favorable to deviance. These definitions, techniques, and attitudes are learned either directly through the process of operant conditioning or indirectly through the modeling of such behavior by others. During adolescence, the peer group is seen as one of the most central and influential groups. As a result, measures of the degree of association with delinquent peers are often used to test the tenets of differential association-reinforcement theory.

Sociological Perspectives of Delinquency

Sociological perspectives tend to explain delinquency as a reaction to problematic relationships between the individual and society. Thus, the environment plays a key role in sociological explanations. Modern sociological theories grew out of an atheoretical approach which Sutherland and Cressey (1978; cited in Shoemaker, 1996) termed the “Cartographic School.” Using maps and charts, researchers from this school noted relationships between certain environmental factors (e.g., population density) and delinquency. These observations provided the impetus for subsequent theorizing on the etiology of delinquency and gave rise to the development of the *social disorganization*, *strain*, and *control* theories of delinquency described below.

Social disorganization represents one of the first sociological theories of delinquency causation. Key to the development of this theory was the work of Shaw and McKay (1969), which focused on understanding the development of delinquency in the city of Chicago. Using an ecological approach that consisted of identifying separate zones in Chicago, differentiated on the basis of population growth, these researchers were able to demonstrate that delinquency tends to decrease as one moves outward from the inner city. They noticed that zones in and around the center of the city were marked by rapid industrialization and immigration. This led the researchers to theorize that rapid industrialization and population growth led to a breakdown in institutional- and community-based controls on behavior, which was the main cause of delinquency. Further, they indicated that in areas marked by high rates of crime and delinquency,

criminal values tended to replace more traditional values which helped to maintain and perpetuate delinquency.

Strain theories view delinquency as stemming from significant discrepancies between socially induced goals and legitimate means to achieving those goals. The dissonance between aspirations and expectations, according to strain theorists, leads to frustration and makes individuals vulnerable to engaging in delinquency. Most notable in the development of strain theory were Merton (1938) and Cloward and Ohlin (1960). These theorists believed that delinquency was likely to be greater among lower class adolescents because it was these individuals who were more likely to encounter obstacles to achieving success, and thus to experience frustration over these perceived blocked opportunities to desirable goals. An underlying assumption of strain theory is that most individuals have accepted the definitions of success delineated by a given society (e.g., economic success). Delinquency thus becomes a means to an end behavior. It is an illegitimate way to achieve legitimate goals that would otherwise be unattainable. In addition, it helps to alleviate, at least in the short run, frustration over wants and needs that are viewed as unattainable.

Control theories explain delinquency as the result of a weakening of conventional social controls, such as the family, school, and law enforcing agencies. The most popular control theory is that developed by Hirschi, which he outlined in the classic work *Causes of Delinquency* (1969). The main tenet of Hirschi's theory is that delinquency results when an individual's bond to society is weakened. Hirschi described the bond to society as consisting of four key elements: (a) attachment, (b) commitment, (c) involvement in

conventional activities, and (d) belief. The first element of the bond is *attachment*. Hirschi posited that the bond to society can be weakened when an individual lacks *attachment* to other people. More specifically, an individual who lacks attachment, according to Hirschi, has failed to internalize the norms of society, or, in other words, to develop a conscience. As a result, the individual is free from moral restraints and is more likely to engage in delinquency and other deviant behavior. The second element of the bond to society was termed *commitment*. This refers to commitment to conventional activities such as obtaining an education or developing a legitimate career. Commitment requires an investment of time and energy in activities that will provide the individual with a stake in society; therefore, the decision to engage in delinquency must be weighed against the risk of losing the investment that has been made in conventional lines of action. For this reason, Hirschi (1969) referred to this element of the bond as the “rational component in conformity” (p. 20). For those individuals who have a high degree of commitment, the decision to engage in delinquency is less desirable. The third component of the bond to society is *involvement in conventional activities*. Hirschi believed that the more one is involved with conventional activities, the less time one has to engage in delinquency. The final element of the bond, *belief*, consists of adherence to the common value system of society. The weaker the belief in the rules of society, the more likely the individual is to engage in delinquency.

Integrated Theories of Delinquency

To date, no one theory has been able to fully account for the development of

delinquency. This is due in large part to the complex nature of delinquency. Theories of delinquency must not only explain the course of delinquency development, but they must account for differences in delinquency observed between groups (e.g., between ethnic or gender groups). As noted previously, the limited inability of models based on a single theoretical perspective to account for delinquency has led to the development of several integrated models of delinquency.

Elliot et al. (1985), for example, proposed a model that integrated aspects of strain, social control, and social learning theories of delinquency. Specifically, they posited that strain would lead to weak conventional bonding (e.g., weak bonding to family), which would lead to strong bonding to delinquent peers, which in turn would lead to engaging in delinquency. By associating with delinquent peers, according to Elliot et al., adolescents learn beliefs and behaviors that lead to involvement in delinquency (the social learning component of the model). Thus, association with delinquent peers represents the most proximal explanatory variable in their integrated model.

Elliot et al. (1985) tested their integrated model using the National Youth Survey. The authors found that their integrated model accounted for 52% to 58% of the variance in delinquency when an index of minor delinquency was used, and 32% to 36% of the variance in delinquency when a measure of serious delinquency was used. Thus, the model was able to account for a substantial portion of the variance in both minor and serious delinquency. Further, the integrated model was demonstrated to have better

explanatory power than most previous tests of models based on a single theoretical perspective (e.g., tests of social control).

Although the integrated theory approach is not without limitations (Shoemaker, 1996), studies like that of Elliot et al. (1985) point to the preference of integrated models over traditional models of delinquency. However, no extant model of delinquency—be it traditional or integrated—has been designed to account for the unique factors that impinge on Latino adolescents' decisions to engage in delinquency. Further, relatively few studies have been conducted to test the applicability of existing models for Latino adolescents. Nevertheless, the integrated model approach provides a fruitful avenue to pursue when attempting to construct a model intended to be especially useful in explaining the delinquency of Latinos because it allows for the inclusion of culturally relevant variables and, as previous research has demonstrated, is likely to provide a better account of delinquency.

After deciding that an integrated model would be constructed, the next step was to determine which variables would be incorporated into the model. It was deemed important to review the demographic and cultural characteristics of Mexican Americans because of the light this information could shed on potential variables to include in the model. A description of these demographic and cultural characteristic is provided in the following section.

Population, Demographic, and Cultural Characteristics of Mexicans Americans: Implications for Delinquency

Population Characteristics

The term Mexican American refers to a group of individuals of Mexican descent who reside in the United States. Mexican Americans are part of a larger subgroup commonly referred to as Latinos. According to the latest census data, Latinos now represent the largest U.S. ethnic minority group (Greico & Cassidy, 2000). Latinos constitute approximately 35.3 million or 12.5% of the total U.S. population. Census data also reveals that Latinos are the fastest growing U.S. ethnic minority group, increasing by more than 50% since 1990 (Guzman, 2000). Further, the Latino population of the United States tends to be younger than the general population. Specifically, it is estimated that 35% of the Latino population is less than 18 years old, while approximately 26% of the U.S. population is less than 18 years old (Guzman). Mexican Americans comprise the largest proportion of Latinos, accounting for approximately 58.5% of the total U.S. Latino population. It is estimated that 20.6 million Mexican Americans reside in the United States (Guzman). Thus, one reason for the focus on Mexican Americans in this study, as opposed to other Latinos subgroups, is because of the large population size of this group. In addition, as is will be noted below, demographic statistics indicate that Mexican Americans tend to be at greater risk for delinquency and other negative outcomes in comparison to other Latino subgroups.

Demographic Characteristics

While population statistics provide a picture of the physical presence of Mexican Americans in the United States, demographic and socioeconomic characteristics reflect the general quality of life for this population. Four salient socioeconomic characteristics were chosen as a basis for comparing the quality of life of Mexican Americans to that of the European American majority of the U.S.: educational attainment level, family composition, income level, and poverty rates.

First, educational attainment levels of Mexican Americans are far below those of European Americans. Statistics based on the U.S. Current Population Survey (U.S. Bureau of the Census, 2000), indicate that 32% of Mexican Americans 25 years of age or older had less than a ninth grade education, 51% had completed high school, and about 7% had completed college. In comparison, only 4% of European Americans in the same age group had less than a ninth grade education, 88% had completed high school, and approximately 28% had graduated from college (Therrien & Ramirez, 2000; U.S. Bureau of the Census). Second, family composition demographics indicate that Mexican Americans tend have larger families than European Americans. Specifically, approximately 18% of U.S. Mexican American family households consisted of six or more people, whereas only 3% of European American households were this large. In 2000, female single-parent households represented 21% of all Mexican American households, compared with 13% of European American households (U.S. Bureau of the Census). Third, income levels reveal that Mexican Americans make substantially less per year as a group than European Americans. In 1999, for example, the median income of

full-time Mexican American employees was approximately \$20,000. In contrast, the median income of full-time European Americans employees was approximately \$33,800 (U.S. Bureaus of the Census). Finally, official statistics indicate worrisome poverty rates for Mexican Americans. Based on 1999 income figures, 24% of the Mexican American population was estimated to be living in poverty, compared with only 8% of the European American population; this indicated that Mexican Americans were approximately three times as likely as European Americans to be living in poverty in 1999. Further, of all Mexican American children residing in the U.S. in 1999, it is estimated that 31% were living below the poverty line, compared to only 9% of European American children (Therrien & Ramirez, 2000; U.S. Bureau of the Census).

Cultural Characteristics

Some of the cultural values that have been described as characteristic of Mexican Americans include a present time orientation, adherence to traditional gender roles, respect for others based on their innate human qualities rather than economic or social status, and emphasis on collectivism rather than independence (Falicov, 1983; Sue & Sue, 1999; Zuniga, 1992). While these values are generally descriptive of traditional Mexican culture, it is important to note that degree of adherence to these values can vary widely among Mexican Americans due to factors such as assimilation to American culture.

The most salient characteristic of Mexican culture, however, is the emphasis on family unity. Indeed, one will be hard pressed to find material on Mexican culture, as well as other Latin American cultures, that does not make reference to the importance and

centrality of the family in the lives of individuals form this group. The great sense of loyalty and respect for the family that is characteristic of many Mexican Americans has been referred to as *familismo* (Marin & VanOss-Marin, 1990). Research shows that familismo affects several aspects of Latino life including interpersonal relationships and the socialization of children (Gonzalez-Ramos, Zayas, & Cohen, 1998; Sabogal, Marin, Otero-Sabogal, VanOss-Marin, & Perez-Stable, 1987).

Another factor important to understanding the behavior of Mexican Americans is acculturation. Acculturation can be defined as behavioral and attitudinal change that results when an individual from one culture comes into continuous contact with a new and usually more dominant culture (Berry, Kim, Minde, & Mok, 1987). Although this construct does not constitute a cultural value per se, it is important because research has demonstrated that acculturation is related to the degree to which Mexican Americans adhere to traditional Mexican values (Kranau, Green, & Valencia-Weber, 1982; Leaper & Valin, 1996). Research by Szapocznik and colleagues (Szapocznik et al., 1986; Szapocznik, Santisteban, Kurtines, Perez-Vidal, & Hervis, 1984; Szapocznik & Truss, 1978) indicates that both acculturation and familismo are important to understanding the development of delinquency among Latino adolescents. These researchers developed an intergenerational/intercultural model to explain delinquency among Latino youth. According to their model, delinquency among Latino youth is often the result of adolescents assimilating to American culture much faster than their parents. This results in an intergenerational gap between adolescents and parents that often leads to a breakdown in the transmission of traditional family values including familismo.

According to Szapocznik and colleagues (1984, 1986) the rift between parents and adolescents often leaves the adolescent vulnerable to delinquency. Szapocznik and colleagues have developed an intervention based on their model that they call bicultural effectiveness training and have found it effective in the treatment of Latino youth experiencing conduct problems (Szapocznik et al., 1986).

Summary

Mexican Americans comprise the largest Latino subgroup. Population and demographic statistics indicate that Mexican Americans tend to have lower than average levels of education and income, and higher than average family sizes and levels of poverty. Based on these socioeconomic factors, it can be gathered that Mexican American families often experience a great deal of strain as they strive to maintain the integrity of the family as a unit; a goal that is highly valued in Mexican culture. As a result of being under constant duress due to socioeconomic factors, the normal protective mechanisms of the family, which are pivotal in Mexican culture, are likely to be debilitated, thus leaving Mexican American children and adolescents vulnerable to a host of adjustment problems including delinquency. The demographic and cultural characteristics reviewed above suggest that SES and quality of familial relationships may be important predictors of delinquency for Mexican Americans. Therefore, these variables will be included in the model to be tested in this study. The following section provides a review of research on these and other variables selected for inclusion in the model.

Review of the Literature on Specific Predictors of Delinquency

Four variables were selected to construct the model under consideration in this study: SES, attachment to parents, emotional distress, and perceived peer substance use. The model constructed was termed the psychosocial strain model because it integrates psychological and sociological variables and posits that strain is the underlying causal mechanism that moves adolescents toward engaging in delinquency. A more detailed description of the model is provided in a later section of this thesis. The present section provides a detailed review of empirical studies that support the inclusion and temporal ordering of the variables in the model. The review is divided into four subsections; one for each predictor in the model.

Socioeconomic Status and Delinquency

Socioeconomic status is a central variable to many theories of delinquency, especially sociological theories. It is not surprising then that studies of the relationship between SES and delinquency are extensive in the sociological literature. However, agreement over the nature of the relationship between SES and delinquency has shifted over the years. Studies conducted prior to 1950 often demonstrated a strong negative relationship between SES and delinquency (Tittle & Meier, 1990). That is, low SES was believed to lead to high rates of delinquency. This view of the relationship between SES and delinquency gained wide acceptance among researchers and the public alike, perhaps due as much to intuitive appeal as to empirical support. However, several studies

conducted after 1950 challenged this hypothesized and generally accepted link between SES and delinquency (Akers, 1964; Clark & Wenninger, 1962; Nye, Short, & Olson, 1958; Winslow, 1967). These researchers argued that the observed relationship between SES and delinquency resulted from reliance on official statistics of delinquency, which tended to be biased. When studies were carried out using self-report measures of delinquency, support for the hypothesized inverse relationship between SES and delinquency was generally not found (Tittle & Meier, 1990).

Prompted by the lack of consistency in research findings, Tittle, Villemez, and Smith (1978) conducted the first review of research examining the relationship between SES and delinquency; however, the focus of their review was on the broader relationship between SES and crime in general and did not solely focus on studies of juvenile delinquency. The authors identified a total of 35 studies examining the relationship between SES and criminality that had been published between the years of 1941-1977. Results revealed a weak correlation with a gamma coefficient of $-.09$ across all studies reviewed. In addition, the data showed a downward trend in the relationship between SES and criminality by the decade. Tittle et al. noted that this historical downward trend could be attributed mostly to studies where official statistics were used to measure crime and delinquency. For those studies that used self-report measures, the relationship between SES and criminality remained relatively low and stable over the decades. The authors concluded that their findings did not support “the conclusion of a negative relationship between social class and crime/delinquency” (p. 653).

Tittle and others’ (1978) study provided the impetus for several subsequent

studies which attempted to reconcile the lack of relationship found between SES and delinquency in their study. Advocates for the SES/delinquency link argued that the relationship between the two variables needed to be specified in order for a significant relationship to emerge. Some researchers posited that the relationship was dependent on how SES was measured, while others suggested that it was dependent on the manner in which delinquency was measured (Tittle & Meier, 1990). Simcha-Fagan and Schwartz (1986), for example, found a negative relationship between SES and delinquency when a measure of serious delinquency was used, but not when a measure of minor delinquency was used. Nevertheless, Tittle and Meier (1990) counter-argued that searching for a specific condition under which SES and delinquency will be related results in a lack of parsimony. In other words, if one looks long and hard, one will usually uncover at least one condition under which SES and delinquency will be correlated. Even so, Tittle and Meier conducted a second review of studies and failed to find support for any specific condition under which SES and delinquency were highly correlated.

Wright, Caspi, Moffitt, Miech, and Silva (1999) offered an interesting explanation for the lack of relationship between the two variables. These authors have suggested that failure of studies to demonstrate a robust relationship between SES and delinquency is due to the possibility that the relationship is mediated by variables (e.g., financial strain and taste for risk) which are likely to be more characteristic of one SES group than another, and which, when considered simultaneously, cancel each other out. For example, they hypothesized that low SES individuals are more likely to experience financial strain than high SES individuals, and thus the mediating variable of financial

strain will lead to delinquency for low SES individuals but not for high SES individuals. On the other hand, they hypothesized that high SES individuals are more likely to develop a taste for risk, and through this mediating variable they are more likely than low SES individuals to engage in delinquency. However, when the effects of these mediating factors are ignored and the sole focus was placed on the relationship between SES level (high or low) and delinquency, the effects of the mediating variables at the different levels of SES tended to cancel each other out, making it appear as if no relationship exists between SES and delinquency.

The study by Wright et al. (1999) is important because it highlights potential paths through which SES can be related to delinquency. Indeed, there seems to be a growing consensus among researchers that the relationship between SES and delinquency is mediated by other variables. However, most studies on the relationship between SES and delinquency have primarily used non-Latino subjects, and the relationship of these variables to Latinos is not clear. Nevertheless, it makes sense that SES will be an important predictor of delinquency for Latino adolescents as well, especially Mexican Americans. The demographic characteristics of Mexican Americans discussed earlier support this belief. To reiterate, the economic hardship that many Mexican American adolescents are likely to experience can have disruptive effects in several areas of their lives. This, in turn, can make them susceptible to engaging in delinquency. Consistent with previous studies, the relationship between SES and delinquency is not likely to be direct, but rather mediated by other variables. Thus, it is argued that the value of SES in a model of delinquency for Mexican American adolescents is as an explanatory variable

which is mediated by other variables which are likely to be more proximally related to delinquency.

Attachment to Parents and Delinquency

Like SES, family variables too have long been considered important in understanding the development of juvenile delinquency (Gorman-Smith, Tolan, Zelli, & Huesmann, 1996; Loeber & Stouthamer-Loeber, 1986). Aspects of the family have been operationalized in numerous ways and several studies have examined the relationship between these family variables and delinquency. Most family variables can be classified into one of two groups: family context and family process variables (Smith & Krohn, 1995). *Family context* variables attempt to measure aspects of the setting in which the family is functioning, and include variables such as family structure (e.g., single-parent families). *Family process* variables attempt to capture specific characteristics that govern the day-to-day functioning of the family system, and include variables such as family beliefs and values, discipline styles, and extent of involvement in activities between family members. The present review focuses on the family process variable of *attachment to parents*. This variable was first clearly delineated by Hirschi (1969), whose original conception consisted of three main dimensions: love and respect between parents and children, communication between parents and children, and supervision of children by parents. Other researchers have developed several variants of Hirschi's attachment to parents construct, but a common element across variables is that they all measure affective ties between parents and children (Rankin & Kern, 1994).

Although much research has been amassed on the relationship between

attachment to parents and delinquency, the findings of these studies have been equivocal. Several studies have found support for attachment to parents as a predictor of delinquency (Cernkovich & Giordano, 1987; Junger & Marshall, 1997; Rankin & Wells, 1990), while others have found no effects on delinquency (Hill, Howell, Hawkins & Battin-Pearson, 1999). Agnew (1991) suggested that support for the attachment to parents variable stemmed primarily from studies that used cross-sectional research designs, which he argued tended to exaggerate the importance of this variable in explaining delinquency. He also noted that longitudinal studies often failed to support a meaningful relationship between attachment to parents and delinquency. Elliot et al. (1985) reviewed several studies and suggested that the relationship between attachment to parents and delinquency was not direct, but rather mediated by other variables; in these studies, peer delinquency often fully mediated the relationship between attachment to parents and delinquency. Thus, the existing literature indicates that the effects of attachment to parents on delinquency are primarily indirect and often mediated by peer delinquency.

Most studies to date, however, have been conducted primarily with European American adolescents. Over the past decade or so, a small but significant body of literature examining this relationship with Latinos has accumulated (Baer, 1999; Frauenglass, Routh, Pantin, & Mason, 1997; Henry, Tolan, & Gorman-Smith, 2001; Rodriguez & Weisburd, 1991; Smith & Krohn, 1995; Sommers, Fagan, & Baskin, 1993; Vega et al., 1993). Most of these studies have included individuals from several Latino subgroups in their sample or have focused on a specific Latino subgroup other than Mexican Americans.

The results of these studies are mixed and tend to vary depending on how the variables of attachment to parents and delinquency are measured. For example, Baer (1999) found a significant relationship between attachment to parents and delinquency when attachment to parents was measured as the degree of closeness between adolescents and their parents, but not when it was measured as degree of communication between adolescents and parents. In another study, Frauenglass et al. (1997) found that family support was significantly related to delinquency, even after controlling for the effects of peer substance use, when delinquency was measured as alcohol use, but not when it was measured as either tobacco or marijuana use.

Results also tend to vary depending on whether the research design of the study was cross-sectional or longitudinal. Results from cross-sectional studies generally find that attachment to parents is statistically related to delinquency, although the magnitude of the relationship is usually small (Baer, 1999; Frauenglass et al., 1997; Sommers et al., 1993). One study, however, found that a significant relationship between family cohesion and delinquency disappeared after controlling for the effects of self-derogation, teacher-derogation, peer approval of drug use, and peer drug use (Vega et al., 1993). Results from longitudinal studies are even less conclusive primarily because of the small number of such studies available. Two of these studies found that family process variables similar to the variable of attachment to parents did not have a direct effect on delinquency for Latinos (Rodriguez & Weisburd, 1991; Smith & Krohn, 1995). On the other hand, a third study which examined the effects of different family types and the peer group on delinquency, showed that attachment to the family was predictive of delinquency. More

specifically, adolescents from families with lower levels of attachment displayed higher levels of both violent and nonviolent delinquency than adolescents from families with higher levels of family attachment (Henry et al., 2001).

As with studies conducted with European American adolescents, it is possible that the relationship between attachment to parents and delinquency among Latinos is mediated by associating with delinquent peers. Four studies exist that have simultaneously examined the effects of attachment to parents (or a similar construct) and exposure to delinquent peers on delinquency (Frauenglass et al., 1997; Henry et al., 2001; Rodriguez & Weisburd, 1991; Sommers et al., 1993). The results of three of these studies demonstrated that although the effects of peer delinquency were usually greater, measures closely related to attachment to parents exerted a statistically significant direct effect on delinquency beyond that which could be explained by associating with deviant peers (Frauenglass et al.; Henry et al.; Sommers et al.). However, in two of these studies this finding depended on how delinquency was measured. Specifically, as noted earlier, Frauenglass et al. found that family support had a direct effect on delinquency, even after controlling for peer delinquency, when delinquency was measured as amount of alcohol use but not when it was measured as amount of tobacco or marijuana use. Similarly, Henry et al. found that family type—from less attached to more attached—was a better predictor than both violent and nonviolent peer delinquency when a measure of nonviolent delinquency was used but not when a measure of violence was used. In addition, of the three studies that supported a direct relationship between attachment to

parents and delinquency beyond what could be explained by peer delinquency, only the study by Henry et al. used a longitudinal design.

Overall, differences across studies in the measurement of attachment to parents and delinquency, in the research design used (i.e., longitudinal vs. cross-sectional), in the Latino subgroups included, and the small number of studies conducted in this area, make it difficult to reach any solid conclusions on the nature of the relationship between attachment to parents and delinquency among Latinos. Nevertheless, the extant literature seems to indicate that attachment to parents does have a significant, perhaps small, direct relationship to delinquency among Latinos. However, this finding seems to be more true of cross-sectional than of longitudinal studies. In addition, the research in this area indicates the relationship between attachment to parents and delinquency among Latinos is at least partially mediated by peer delinquency.

Delinquent Peers and Delinquency

Numerous studies have shown a robust and positive relationship between associating with delinquent peers and delinquency (Agnew, 1991; Aseltine, 1995; Bailey & Hubbard, 1990; Elliot et al., 1985; Farrington, 1989; Jensen & Eve, 1976; Judy & Nelson, 2000; Keenan, Loeber, Zhang, Stouthamer-Loeber, & Van Kammen, 1995; Linden, 1978; Morash, 1986; Paetsch & Bertrand, 1997; Simons, Miller, & Aigner, 1980). This relationship has been found for several different forms of delinquency, including non-violent delinquency, violent offenses, and substance abuse. However, most of this research has been cross-sectional, which has led some researchers to question

the belief that a causal relationship exists between the two variables (e.g., Hirschi & Gottfredson, 1980). Nevertheless, several longitudinal studies have also supported a causal link from peer delinquency to delinquency (Farrington, 1989; Hoffmann, 1993; Thornberry, Krohn, Lizotte, & Chard-Wierschem, 1993; Tremblay, Masse, Vitaro, & Dobkin, 1995; Warr & Stafford, 1991).

Peer delinquency has also been shown to be more proximally related to delinquency than other predictors of deviant juvenile behavior such as attachment to parents. As noted in the previous section, research conducted primarily with European Americans has often found that peer delinquency is a better predictor of delinquency than attachment to parents, and that the effect of attachment to parents tends to diminish to weak or nonexistent levels after the effects of peer delinquency are controlled. In addition, associating with deviant peers has often been shown to mediate the relationship between attachment to parents and delinquency (Elliot et al., 1985). Thus, existing research indicates that associating with delinquent peers is a direct correlate of delinquency as well as mediator of the relationship between attachment to parents and delinquency.

An extensive search of the literature, however, revealed that only five such studies have focused on Latino adolescents, and even less have specifically focused on Mexican Americans. As has been the case with studies conducted with European Americans, findings from these studies suggest that associating with delinquent peers is positively related to Latino adolescent delinquency (Frauenglass et al., 1997; Henry et al., 2001; Rodriguez & Weisburd, 1991; Sommers et al., 1993; Vega et al., 1993). Thus, there is

some empirical evidence to support the belief that associating with delinquent peers will be a significant predictor of delinquency for Latinos.

Emotional Distress and Delinquency

Emotional distress is broadly defined here as any disturbance in emotion which is inner-directed. Emotional distress can range in severity from a specific symptom (e.g., irritability) to a mood disorder (e.g., depression). It is distinguished from psychological problems and symptoms which are outer-directed such as aggressiveness and hyperactivity. While a substantial amount of research has examined the relationship between outer-directed behavior problems (e.g., hyperactivity) and delinquency, there has been a paucity of research on the relationship between emotional distress and delinquency. The few studies that have been done suggest that, at best, only a weak relationship exists between the two variables (e.g., Farrington, 1989; Mitchell & Roosa, 1981). However, too few studies have been conducted to discard emotional distress as a predictor of delinquency. Further, those studies that have been conducted have focused almost exclusively on European American children and adolescents and the extent to which those findings are applicable to Latino adolescents is not clear.

Yet, there are several reasons to believe that there might be a stronger positive relationship between emotional distress and delinquency among Latino youth than what has been shown for European American youth. First, there is evidence indicating that a high percentage of juvenile delinquents experience co-occurring emotional problems (Armistead & Wierson, 1992; Dembo, LaVoie, Schmeidler, & Washburn, 1987; Kroll et al., 2002; McManus, Alessi, Grapentine, & Brickman, 1984; Pliszka, Sherman, Barrow,

& Irick, 2000). These studies do not necessarily establish a causal relationship between emotional distress and delinquency because emotional distress can be as much a consequence as a cause of delinquency. Kroll et al., for example, found that of 38 boys in their study who had been identified as displaying significant depressive symptoms, 39% of them had developed these symptoms since their admission into a youth detention center. Still, this left 61% of youth who had pre-existing symptoms of depression before entering the youth detention center. Further, Pliszka et al. found that 20% of the incarcerated youth who comprised their sample met criteria for major depressive disorder, with the onset of symptoms occurring prior to incarceration.

Second, research suggests that Latino children and adolescents tend to experience a greater level of emotional difficulties than European American children and adolescents (U.S. Department of Health and Human Services, 2001). The reasons for the greater prevalence of emotional problems among Latino children and adolescents are not clear, but acculturation difficulties and over-representation of Latinos in low-income populations have been offered as likely explanations (Glover, Pumariega, Holzen, Wise, & Rodriguez, 1999; Potter, Rogler, & Mosicki, 1995; Roberts & Chen, 1995, Roberts, Roberts, & Chen, 1997; Vera et al., 1991). These studies suggest that emotional distress and delinquency may have a similar etiology among Latinos, which supports the inclusion of emotional distress in a model designed to explain delinquency in Latinos.

Third, the inclusion of emotional distress as a predictor of delinquency for Latinos is supported by ethnographic literature on Latino gang involvement (Morales, 1992; Vigil, 1988). Belitz and Valdez (1994), for example, suggested that much of the hostility

and aggression that many of these youth display often stems from underlying emotional problems. Further, they suggest that many Latino gang members come from dysfunctional families that are unable to meet the psychological needs of the adolescent. As a result, many of these individuals turn to gangs for fulfillment of unmet emotional and psychological needs.

There is also a considerable amount of research which indicates that dysfunctional family patterns are associated with emotional problems in children and adolescents (Burbach & Borduin, 1986; Fauber, Forehand, McCombs, & Wierson, 1990; Ge, Best, Conger, & Simons, 1996; Harris & Howard, 1987; Kleinman, Handel, Enos, Searight, & Ross, 1989; Lempers, Clark-Lempers, & Simons, 1989; Wentzel & Feldman, 1996). For example, in a recent study that tested the effects of parental factors (i.e., parental warmth, parental hostility, and child management skill) on the developmental trajectory of behavior problems in a sample of European American adolescents, Scaramella, Conger, and Simons (1999) found that parents who exhibited lower levels of hostility and better child management skills had adolescents who exhibited fewer internalizing behavior problems than adolescents whose parents did not display these parenting qualities. Several studies using Mexican American samples have yielded similar results (Gorman-Smith, Tolan, Henry, & Florsheim, 2000; Hernandez-Guzman & Sanchez-Sosa, 1997). Dumka, Roosa, and Jackson (1997), for example, using reports of low-income Mexican immigrant and Mexican American children and their mothers, found that children whose mothers engaged in more supportive parenting exhibited fewer depressive symptoms than

children whose mothers were less supportive. These studies indicate that a link between parenting factors and delinquency may be mediated by emotional distress.

In sum, there is some empirical evidence to support a link between emotional distress and delinquency among Latino adolescents. Further, there is some evidence from the empirical literature to indicate that emotional distress may mediate the relationship between attachment to parents and delinquency for Latinos.

Description of the Psychosocial Strain Model

The psychosocial strain model to be tested in this study is depicted in Figure 1. The construction of the model was guided by research on integrated models of delinquency, demographic and cultural characteristics of Mexican Americans, and by the findings of studies just discussed. Although the proposed model is an integrated model that draws from different theoretical perspectives, it is proposed that strain is the key causal mechanism that underlies the model and leads adolescents to delinquency. At every step in the model, strain, in some form or another, is hypothesized to move the adolescent further along the path to delinquency.

The model begins by recognizing that low SES can have deleterious effects on family functioning. Further implicated by the position of SES in the model is that the relationship between SES and delinquency is not direct, but rather is mediated by other variables. At the next step, attachment to parents is presumed to have a direct relationship to both emotional distress and adolescents' perceptions peer substance use (a proxy measure for peer delinquency). The fact that attachment to parents is expected to be

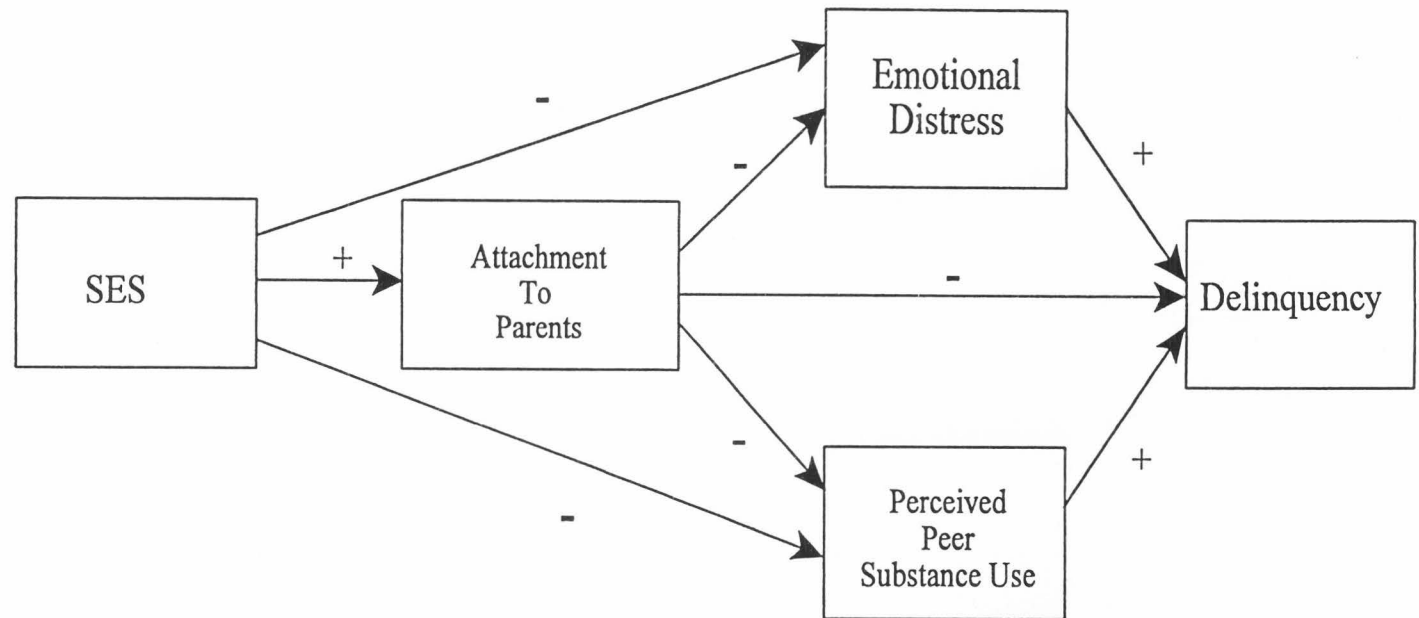


Figure 1. The Psychosocial Strain Model.

related to these important variables is due to an awareness of the importance of family life in Latino culture. Specifically, the model indicates that low attachment to parents results in a significant amount of strain for Latino adolescents. This family-based strain is, in turn, hypothesized to lead to emotional distress and associating with delinquent peers. In the final step of the model, attachment to parents, emotional distress, and perceived peer substance use are all assumed to exert a direct influence on Latino adolescents' decisions to engage in delinquency. The next section discusses findings of gender differences in delinquency that have important implications for the applicability of the psychosocial strain model.

Gender Differences in Delinquency

One of the most robust findings in the literature on delinquency has been that males engage in a substantially higher rate of delinquency than females (Steffensmeier & Allan, 1996; Wilson & Herrnstein, 1985). This finding has been commonly referred to as the "gender gap" in delinquency. In addition, there is evidence indicating that male delinquency is characterized by more severe and chronic delinquency than that of females (e.g., Fergusson & Horwood, 2002).

In attempting to explain the gender gap in delinquency, researchers have discovered that gender differences in delinquency do not remain constant over time. Keenan and Shaw (1997), for example, cited evidence for a greater degree of variability in girls displays of problem behavior over the course of development in comparison to that of boys. More specifically, they noted that before four years of age, few differences

exist between boys and girls in both the rate and severity of several problem behaviors including aggression, internalizing behavior, and externalizing behavior problems. However, at around the age of four, the display of problem behaviors by girls tends to decrease, while the display of problem behaviors by boys tends to either remain the same or increase. This results in a divergence in behavior problems between boys and girls that remains relatively stable throughout the period from preschool to adolescence and that gives rise to the observed gender gap in delinquency.

Reasons for the divergence in problems behaviors—including precursors to delinquency and subsequent delinquency—between boys and girls in early childhood are not completely clear. However, differences in the socialization of boys and girls has been implicated as one of the key factors underlying the gender gap in delinquency (Keenan & Shaw, 1997; Steffensmeier & Allan, 1996). According to the gender socialization explanation, the shaping of girls by different socialization agents (e.g., parents and schools) to adhere to traditional gender roles may channel their behavior from overt and difficult behaviors to more subtle and less problematic behaviors. For example, there is evidence from the developmental psychology literature indicating that girls, relative to boys, are socialized to develop more prosocial and caring behaviors (Hart, DeWolf, Wozniak, & Barts, 1992; Smetana, 1989). This pattern of socialization may lead to a reduction in aggressive behaviors but to an increment in internalizing behaviors such as depression in girls (Zahn-Waxler, Cole, & Barrett, 1991). Moreover, adherence to traditional gender roles by parents may lead to a greater degree of supervision of

daughters relative to sons, thus, limiting the ability of females to become involved in delinquency but increasing opportunities for males.

Gender stereotypes, through their effects on access to the means of delinquency, may also contribute to the gender gap in delinquency. For example, the stereotypical views of females as being emotionally sensitive and weak may limit their ability to join established groups with high rates of involvement in delinquent activities (e.g., gangs). In fact, research has shown that only a minimal gender gap exists on delinquent behaviors for which males and females tend to have equal access to, such as petty theft (Steffensmeier & Allan, 1996). Further, even if females do manage to access these groups, their role within the group may be more peripheral in comparison to that of male members (Steffensmeier & Terry, 1986); further controlling female involvement in delinquency. These explanations imply that certain variables may have differential effects on male and female decisions to engage in delinquency. For example, as noted earlier, females may be at greater risk than males for developing internalizing behavior problems (e.g., depression) and through this variable they may be more vulnerable than males to engaging in delinquency. Therefore, research designed to test models of delinquency needs to take into account potential gender differences in the overall applicability of such models.

It is also possible that the applicability of a model of delinquency not only depends on gender, but also on the interaction between gender and ethnicity. There is much ethnographic literature suggesting that Mexican Americans tend to adhere to traditional gender roles to a greater degree than European Americans (Davenport &

Yurich, 1991; Espin, 1999; Stevens, 1973). Two popular terms used to describe the gender role identities of Mexican American men and women have emerged from this literature: *machismo* and *marianismo*. Although different definitions of *machismo* have been offered, the term generally describes a Mexican American male disposition characterized by dominance, virility, and aggressiveness. In contrast, the term *marianismo* is used to describe a Mexican American woman as self-sacrificing, nurturing, and spiritually grounded (Davenport & Yurich). Despite the popularity of these terms, few empirical studies have been conducted to examine their validity as descriptors of Mexican American gender-related behavior. Nevertheless, if there is some truth to these commonly held beliefs, then it would be expected that Mexican American parents socialize their children according to these beliefs. If this were the case, then the gender socialization explanation for the gender gap in delinquency would be especially applicable to Mexican Americans.

The Present Study

The literature examined for this review indicates that Mexican American youth are at risk for delinquency and empirical studies designed to explain delinquency in this population are important and necessary. The purpose of the present study was to compare rates of delinquency between Mexican American and European Americans and to test a newly developed integrated model of delinquency (see Figure 1). The model was termed the *psychosocial strain model* because it is comprised of both psychological and sociological variables and posits that strain is the main variable that pushes adolescents

towards involvement in delinquent activities. The following are the research questions and specific hypotheses to be tested as part of this study.

Research Questions and Hypotheses

This study will address the following research questions.

1. Do adolescents of Mexican descent show greater levels of delinquency than European American adolescents?

The first question concerns rates of delinquency between Latino and European American adolescents. Specifically, do Latinos show greater levels of delinquency than European Americans? This initial question is important because, although there is some evidence that Latinos display disproportionately higher levels of delinquency than European Americans, few studies have compared rates of delinquency between Latinos and European Americans and few studies have established rates of delinquency for Latinos within the past decade. Further, rates of delinquency for Latinos cannot be established using official statistics because of the lumping of these youth with European Americans. The large sample size of this study allows for this comparison to be made more reliably. It is hypothesized that Mexican Americans will show higher rates of delinquency than European Americans.

2. Does the psychosocial strain model adequately explain delinquency involvement by Mexican American adolescents?

Second, this study will test how well the psychosocial strain model explains delinquency of Mexican American adolescents. It is hypothesized that the model will explain a significant amount of the variance in the self-reported delinquency of Mexican-

American adolescents. In addition, it is hypothesized that each path in the model will be statistically significant.

3. Does the model yield different results based on gender, or does it apply equally well to male and female Mexican American youth?

Prompted by well documented finding that rates of delinquency often vary by gender, this study will test the psychosocial strain model separately for Mexican American males and females. It is hypothesized that the SES will have similar effects for males and females. Given the strong orientation towards the family among Mexican Americans, it is hypothesized that attachment to parents will also have similar effects for males and females. Peer delinquency has been shown to be one of the best predictors of delinquency; thus, it is hypothesized that this variable will be directly related to delinquency for both males and females. Finally, it is expected that the effects of emotional distress on delinquency will vary by gender, with emotional distress explaining more of the variance in delinquency for females than for males.

CHAPTER III

METHODS

This study is based on data from the National Longitudinal Study of Adolescent Health (Add Health; Bearman et al., 1997). Add Health was designed to investigate the effects of social and familial contexts on the health-related behaviors of adolescents. Data were collected in two waves approximately one year apart. Three separate panels of data were collected at Wave I and one was collected at Wave II; a more detailed description of these panels is provided below.

The data for the present study were drawn from both Waves I and II. Access to the Add Health data for use in this study was made possible through a grant from the National Institute of Child Health and Human Development to Brent C. Miller, Ph.D., principal investigator. Funding from the grant was used to obtain the Add Health data set from the Carolina Population Center at the University of North Carolina. A security agreement was signed and permission was granted to use the Add Health data for the present study by Add Health project administrators. The following sections provide a description of the design of the Add Health study and how Add Health data was used in the present study.

Design of the Add Health Study

Add Health used a cluster sampling design to obtain a large and nationally representative sample of adolescents in Grades 7 through 12. Eighty high schools throughout the United States were selected as possible sampling units. Systematic

sampling and stratification procedures were also used to ensure that the identified sample of schools was representative of U.S. schools in terms of region of the country, degree of urbanicity, school type, ethnicity, and school size. More than 70% of the identified schools agreed to participate in the study and those schools that refused to participate were replaced by a school from within the same stratum. In addition, school officials at each of the 80 high schools were asked to identify middle schools that included the seventh grade and that sent graduates to their school (feeder schools) for inclusion in the study. Some high schools were comprised of Grades 7 through 12 and served as their own feeder schools. In this manner, a total of 52 middle schools were also selected as sampling units. Thus, a grand total of 132 schools (80 high schools and 52 middle schools) throughout the United States served as the sampling units from which the Add Health data was drawn. All students attending these schools were eligible for inclusion in the study.

Wave I data was collected between September 1994 and December 1995 and was comprised of three separate panels of data: an In-School adolescent sample, an In-Home adolescent sample, and an In-Home Parent sample (see Table 1). The In-School sample was comprised of 90,118 adolescents who completed a self-report questionnaire at their school. The questionnaire required between 45-60 minutes to complete and was administered during a designated class period. Adolescents who were absent on the day the questionnaire was administered were not allowed to complete the questionnaire at a later date. A random sample of 15,243 adolescents from the 132 eligible schools, stratified by gender and age, was selected to comprise the In-Home adolescent sample.

Table 1

Characteristics of Add Health Data Panels

Panel	Sample size		Respondent	Data type
	Wave I	Wave II		
In-School sample	90,118	-----	Adolescent	Questionnaire
In-Home sample	20,745	14,738	Adolescent	Interview
In-Home Parent sample	17, 125	-----	Parent	Interview

Of these adolescents, a total of 12,105 completed interviews. Additionally, several subsets of adolescents were targeted for inclusion in the In-Home sample to increase the representativeness of these groups in the sample. These included adolescents from certain ethnic minority groups (e.g., Cuban), adolescents comprising social networks, adolescents with physical disabilities, and adolescents who were genetically related or were not related but were living in the same household; this last group is collectively referred to as the genetic sample. Inclusion of these adolescent subsets increased the In-Home sample to 18,924 adolescents. In addition, the genetic sample was augmented with 1,821 adolescents from alternate schools because the original genetic sample size was too small for conducting analyses. Thus, the final In-Home sample consisted of 20,745 adolescents.

Data for the In-Home sample was collected through interviews conducted at the home of adolescents. The time required to complete the interview varied from adolescent to adolescent, but usually required between one and two hours. All responses to

interview questions were directly entered into a laptop computer and no paper questionnaires were used. For less sensitive questions, interviewers read the questions out loud and recorded the respondents' answers. For questions of a more sensitive nature (e.g., delinquent activity), responses were administered using audio-computer assisted personal interviewing (A-CAPI) technology. With A-CAPI adolescents listened to pre-recorded questions via earphones and entered their responses directly into the laptop computer. A-CAPI helped to increase the response rate and accuracy of responses to questions of a more sensitive nature. All In-Home interviews were completed between April and December, 1995.

A final panel of data consisted of a questionnaire completed by parents. One parent of each adolescent in the In-Home sample, preferably the resident mother, was asked to complete a questionnaire of approximately 30 minutes in duration. Of these, a total of 17,125 parents (83% of the adolescent In-Home sample) completed the questionnaire. The questionnaire was formatted for optical scanning and was interviewer assisted.

Wave II data was collected between April and August, 1996 and only included the Wave I In-Home sample. Neither the Wave I In-School questionnaire nor the Wave I parent interview were readministered at Wave II. In addition, adolescents who were in the twelfth grade and were not part of the genetic sample were not included in Wave II. Also not included in Wave II were adolescents who were exclusively part of the Wave I disabled oversample. A total of 14,738 adolescents (71% of the original In-Home sample) were interviewed at Wave II using the same interview format used at Wave I.

The content of the Wave II interview was generally similar to that of Wave I, with some questions added and some modified at Wave II. Modification of variables at Wave II had no impact on the present study because the only Wave II variable used in this study was identical at both waves.

A key feature of the Add Health data set was that it was designed to provide nationally representative estimates of adolescent behavior. In order to accomplish this, a complex sampling design, including clustering and stratification, needed to be used. As a result, analyses based on Add Health data will produce biased variance estimates because clustering and stratification procedures yield observations that are not independent nor identically distributed. In addition, while specific oversamples were desired to increase the representativeness of these groups in research, their inclusion will result in biased population point estimates (e.g., means) that eliminate the possibility of calculating nationally representative estimates of adolescent behavior. Thus, in order to obtain accurate point and variance estimates, statistical software packages that can account for design effects and sample weights needed to be used (Chantala & Tabor, 1999). Two sample weight variables were created for use with the Add Health data set, one for each wave of data (Tourangeau & Hee-Choon, 1998). When applied to statistical analyses, these variables weigh individual cases to correct for oversampling so that accurate population estimates can be obtained. Students who were selected from alternate schools to augment the genetic sample could not be assigned a weight. Chantala and Tabor recommend that students with missing weight values be eliminated from analyses.

Study Sample

The sample for the present study was drawn from the Wave I and II In-Home samples. This study focused on Mexican American adolescents¹. However, to examine the question of whether or not Mexican American adolescents engage in a disproportionate level of delinquency, a sample of adolescents of European descent was included as a comparison group. Thus, analysis of European American adolescents' data was limited to comparing rates of delinquency with Mexican American adolescents.

Add Health asked several questions that allowed the ethnicity of adolescents participating in the study to be established. First, adolescents responded to the question "Are you of Hispanic origin?" as either yes or no. Those individuals who answered "yes" to this question were further asked to specify their Hispanic subgroup. Adolescents who specified their subgroup as "Mexican" were initially selected for inclusion in the study. Those students who answered "no" to the question "Are you of Hispanic origin", were asked to specify their race and were classified into one of the five following ethnic groups: European American, African American, Native American, Asian of Pacific Islander, or Other. Only Mexican American and European Americans were selected for possible inclusion in this study.

To allow for the identification of adolescents from mixed ethnic backgrounds, Add Health allowed adolescents to respond to more than one of the questions used to establish ethnicity. To avoid confounding effects due to adolescents who were biracial, Mexican American and European American adolescents who indicated they belonged to more than one ethnic group were excluded from the study. In addition to ethnicity, the

study sample was selected using the following inclusion criteria: (a) adolescents had to have a valid score on all variables of interest at Wave I and II, (b) they had to have a parent complete the In-Home Parent questionnaire, and (c) they had to have a sampling weight assigned to them for statistical analyses at both Wave I and II.

Implementing these criteria yielded the final sample of 6,407 adolescents used in this study, 5,709 European American and 698 Mexican American. To determine if study findings could have been affected by selection criteria, preliminary analyses compared the final sample to groups of adolescents excluded from the study. The mean age of all adolescents in the sample was 15.42 years ($SD = 1.58$). The mean age of European American and Mexican American adolescents was 15.41 years ($SD = 1.54$) and 15.46 years ($SD = 1.98$), respectively. Approximately 50% of the total sample was female ($n = 3,234$) and 50% was male ($n = 3,173$). Fifty-one percent of the European American adolescents were female ($n = 2,890$) and 49% were male ($n = 2,819$), while 49% of the Mexican American adolescents were female ($n = 344$) and 51% were male ($n = 354$). In addition, Table 2 presents language use and country of birth characteristics of Mexican American adolescents in the final sample.

Measures

With the exception of the measure for emotional distress, the variables discussed below were derived from separate Add Health items that do not represent well known or standardized research instruments. Thus, two steps were taken to help ensure the reliability of these measures. First, individual items were examined for content validity

Table 2

Language and Country of Birth Characteristics of Mexican American Adolescents

Characteristics	<i>n</i>	%
Primary Language Spoken at Home		
English	410	59
Spanish	280	40
Other	8	1
Adolescent Born in the U.S.		
Yes	599	86
No	99	14
Parent Born in the U.S.		
Yes	340	49
No	358	51

Note. Parents' country of birth was gathered from the In-Home Parent interview. All other information in the table was gathered from the In-Home adolescent interview.

and grouped together for possible inclusion in the final scale on this basis. Second, a Cronbach's alpha reliability score was calculated for each group of scale items and those items that decreased reliability were excluded from the final scale. However, these procedures were not applied to the measure of SES because it was a categorical variable. For each of the scales used in this study, adolescents had to answer at least half of the items in order to receive a valid score. For example, if an adolescent had scores missing on three or more items of the Attachment to Parents scale (comprised of five items), a total index score was not calculated for that individual. Three of the variables in the present study were severely skewed. Log transformations were done for these variables

but examination of the distributions of the transformed variables revealed little change. Therefore, transformed variables were not used. Each individual scale is described in more detail below and in the Appendix.

Socioeconomic Status

Socioeconomic status (SES) was measured at Wave 1 through a question which asked parents to report the family's 1994 yearly income before taxes. Parent-reported income figures were then used to place adolescents into one of the following SES categories: \$9,999 or lower, \$10,000-\$14,999, \$15,000-19,999, \$20,000-29,999, \$30,000-\$39,999, \$40,000-\$49,999, \$50,000-\$59,999, \$60,000-higher.

Attachment to Parents

The Attachment to Parents scale consisted of five items, measured at Wave I, which ask respondents to report the level of connectedness between themselves and their parents (e.g., "How close do you feel to your mother?"; see Appendix). Items comprising the attachment to parents scale were responded to using a Likert-type scale ranging from 0 to 4. Adolescents were asked to answer the same five questions separately for their mothers and fathers. Total index scores for this measure were calculated in two steps. First, a separate mean for mothers and fathers was calculated. In other words, an *attachment to mother only* and an *attachment to father only* score was obtained for each adolescent. Subsequently, the *attachment to mother* and the *attachment to father* scores were averaged to obtain an index *attachment to parents* score for each adolescent. For adolescents who came from single-parent households, the average of the items for the

available parent was used to measure attachment to parents. Possible scores on this scale ranged from 0 to 4, with higher scores indicating a greater degree of attachment to parents. Cronbach's alpha for this scale was .87 for European Americans and .88 for Mexican Americans.

Emotional Distress

Emotional distress was measured at Wave I with a modified version of the Centers for Epidemiological Studies Depression Scale (CES-D). The modified scale consisted of 19 items that primarily tapped depressive symptomatology (e.g., "You didn't feel like eating, your appetite was poor" and "You felt lonely"; see Appendix). Adolescents were asked to report how often during the past week each of the items was true of them. Items were responded to using a Likert-type scale ranging from 0 to 3. A total mean, rather than a total sum, index score was calculated for this measure so that valid comparisons could be made between adolescents who responded to all items and those who might have failed to answer some of the items. Possible scores on this scale ranged from 0 to 3, with higher scores indicating a greater degree of emotional distress. Cronbach's alpha for this scale was .65 for European Americans and .69 for Mexican Americans.

Perceived Peer Substance Use

A proxy measure of peer delinquency was constructed and measured at Wave 1. This scale consisted of three items that were limited to measuring the degree of substance use of respondents' peers, as perceived by the respondent (see Appendix). Respondents

were asked to indicate how many of their three best friends smoke at least one cigarette per day, how many drink alcohol at least once a month, and how many use marijuana at least once a month. Research demonstrating a strong link between substance use and delinquency supports the use of measure of peer delinquency limited to peer substance use (Barnes, Welte, & Hoffman., 2002). The questions for this measure were administered using A-CAPI technology. A total index score was calculated as an average of the three items. Possible scores on this scale ranged from 0 to 3, with a higher score indicating more involvement with delinquent peers. Cronbach's alpha for this scale was .76 for European Americans and .77 for Mexican Americans.

Delinquency

To address questions regarding the psychosocial strain model's ability to explain delinquency, a 10-item self-report measure of delinquency was constructed. Data on this measure was collected at Wave II (see Appendix). Respondents were asked to indicate how often, during the past 12 months, they had engaged in various delinquent acts. Several types of delinquency were assessed, including fighting (e.g., "How often did you take part in a fight where a group of friends was against another group?"), theft (e.g., "How often did you steal something worth more than \$50?"), weapon offenses (e.g., "How often did you use or threaten to use a weapon to get something from someone?"), and property damage ("How often did you deliberately damage property that didn't belong to you?"). Items on this measure were responded to using a Likert-type scale ranging from 0 to 3. Like the perceived peer substance use items, items for the delinquency scale were administered using A-CAPI technology. Possible scores on this scale range from 0

to 30, with higher scores indicated a higher degree of involvement in delinquent activities. Cronbach's alpha for the scale was .79 for European Americans and .74 for Mexican Americans.

To compare rates of delinquency between European American and Mexican American adolescents, three categorical variables of delinquency were derived from scores on items of delinquency measured at Waves I and II. The first variable was labeled "12-month ever" delinquency and identified adolescents who had engaged in at least one act of delinquency during the 12 months prior to being interviewed. Thus, adolescents with a score of 1 or greater on the delinquency scale just discussed were classified into the "12-month ever" delinquency group at either Time 1 or Time 2. The second variable was labeled "12-month serious" delinquency and identified adolescents who engaged in one of the more serious types of delinquency. Specifically, an adolescent who had received a score of 1 or greater on one of the following delinquent acts was classified into the "12-month serious" delinquency category: in the past 12 months, went into a house or building to steal something; in the past 12 months, used or threatened to use a weapon to get something from someone; and in the past 12 months, sold marijuana or other drugs. The third variable was labeled "12-month very serious" delinquency and identified adolescents who had engaged in more delinquency than 99% of the total sample of adolescents. Thus, these were adolescents who were more likely to be serious and chronic offenders.

Analysis Plan

Chi-square tests and odds ratios were used to compare rates of delinquency of Mexican American and European American adolescents. Path analysis was used to test the psychosocial strain model's ability to explain the delinquency of Mexican American adolescents. Path analysis was also used to test the psychosocial strain model's ability to explain delinquency separately for Mexican American boys and girls. Due to complex sampling design of Add Health, all statistical analyses were run using STATA Release 6 (STATA, 1999) which has procedures that allow design effects to be taken into account when analyzing complex survey data. For analyses used to compare rates of delinquency between Mexican American and European American adolescents, the sampling weight variable calculated for the Wave I In-Home sample was used. This same weight variable was used for regression analyses that only included Wave I variables (e.g., the path from SES to attachment to parents in the psychosocial strain model). Regression analyses that included delinquency as the dependent variable used the sample weight variable calculated for the Wave II In-Home sample because delinquency was measured at Wave II and all Mexican American adolescents included in Wave I were also include in Wave II (Chantala & Tabor, 1999).

Endnote

1. Arriving at a generally accepted label for the primary group of interest in this study posed somewhat of a challenge given that the following labels have been used interchangeably to refer to the same group: Mexican, Mexican American, and Chicano. The label Mexican American was used in this study primarily as a matter of convenience to refer to adolescents of Mexican descent who were residing in the United States at the time of data collection. However, it is important to note that individuals identified as Mexican American in this study may actually prefer Mexican or Chicano.

CHAPTER IV

RESULTS

This chapter presents analyses in several sections. The first section contains preliminary analyses to determine whether selection criteria used in this study could have affected the main results. It also provides descriptive statistics for pertinent variables separately for European American and Mexican American adolescents. The second section addresses the question of whether or not adolescents of Mexican descent show greater levels of delinquency than European American adolescents. The third section presents results for the psychosocial strain model based on the total sample of Mexican American adolescents. The final section presents results for the psychosocial strain model separately for Mexican American males and females.

Preliminary Analyses and Descriptive Statistics

Because selection criteria precluded several Mexican American and European American adolescents from being included in the study, preliminary analyses were conducted to determine whether adolescents in the final sample differed from excluded adolescents on pertinent variables. The majority of the exclusions were due to the application of the following two criteria: (a) adolescents did not have a valid score on all variables of interest at Waves I and II, and (b) adolescents did not have a parent who completed the In-Home Parent interview. Further, for those students who were excluded because of the first criterion, most were excluded because they were not reinterviewed at Wave II. Thus, comparisons were made between adolescents in the final sample and

adolescents who were excluded because they did not have a parent complete the In-Home parent interview or because they were not interviewed at Wave II. These results are shown in Tables 3 through 6.

As can be seen from Tables 3 and 4, Mexican Americans in the final sample did not differ significantly from Mexican Americans excluded from the study on most variables, regardless of the reason for exclusion. The only exception was on perceived peer substance use ($t = -1.98, p < .05$). However, the magnitude of this difference was small as indicated by a standardized group mean difference of $-.14$. In contrast, Tables 5 and 6 indicate that European Americans included in the final sample differed significantly from European Americans not included in the study on several variables. Statistically significant differences were found for perceived peer substance use and emotional distress between adolescents in the final sample and those excluded because they did not have a parent who completed the In-Home interview (see Table 5). For comparisons between adolescents in the final sample and those excluded because they were not interviewed at Wave II, statistically significant differences emerged for attachment to parents, perceived peer substance use, and emotional distress (see Table 6). These differences, however, were the result of the large sample sizes used to make comparisons. Cohen (1988) suggested that standardized group mean differences of $.00$, $.20$, $.50$, and $.80$, corresponded to zero, small, medium, and large effect sizes. Thus, as can be seen from Tables 5 and 6, all group mean differences, even those that were statistically significant, yielded small effect sizes. Overall, preliminary analyses indicated that the

Table 3

Comparison Between Mexican Americans Not Excluded and Mexican Americans

Excluded Due to Not Having a Parent Complete an Interview

Measures	Not excluded			Excluded			t-value	ES
	M	SD	n	M	SD	n		
Attachment to parents	3.30	.60	698	3.20	.74	554	1.18	.15
Perceived peer substance use	.80	.83	698	.91	.94	569	-1.63	-.12
Emotional distress	.78	.27	698	.81	.34	577	-1.42	-.10
Time 1 delinquency	2.50	3.80	698	2.40	3.60	573	.38	.03

Note. Sample sizes for the excluded adolescents differ by measure because excluded adolescents did not have complete data on all variables.

Table 4

Comparison Between Mexican Americans Not Excluded and Mexican Americans

Excluded Due to Not Being in Wave II

Measures	Not excluded			Excluded			t-value	ES
	M	SD	n	M	SD	n		
Income	32.80	33.90	698	27.90	23.10	258	1.46	.17
Attachment to parents	3.30	.60	698	3.20	.73	407	1.46	.15
Perceived peer delinquency	.80	.83	698	.93	.96	457	-1.98*	-.14
Emotional distress	.78	.27	698	.83	.34	467	-1.97	-.16
Time 1 delinquency	2.50	3.80	698	2.10	4.10	460	1.18	.10

Note. Means for income reflect thousands of dollars. Sample sizes for the excluded adolescents differ by measure because excluded adolescents did not have complete data on all variables.

* $p < .05$.

Table 5

*Comparison Between European Americans Not Excluded and European Americans**Excluded Due to Not Having a Parent Complete an Interview*

Measures	Not excluded			Excluded			t-value	ES
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>		
Attachment to parents	3.40	.58	5709	3.30	.66	1816	1.97	.16
Perceived Peer substance use	.83	.89	5709	1.00	.97	1904	-3.67**	-.18
Emotional distress	.78	.25	5709	.80	.27	1932	-1.98*	-.08
Time 1 delinquency	1.70	3.10	5709	1.60	3.10	1922	.97	.03

Note. Sample sizes for the excluded adolescents differ by measure because excluded adolescents did not have complete data on all variables.

* $p < .05$. ** $p < .01$.

Table 6

*Comparison Between European Americans Not Excluded and European Americans**Excluded Due to Not Being in Wave II*

Measures	Not excluded			Excluded			t-value	ES
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>		
Income	50.70	49.10	5709	49.70	39.00	1912	.66	.02
Attachment to parents	3.40	.58	5709	3.30	.68	2494	4.97**	.16
Perceived peer substance use	.83	.89	5709	1.10	.98	2571	-6.65**	-.16
Emotional distress	.78	.25	5709	.80	.28	2606	-2.88**	-.07
Time 1 delinquency	1.70	3.10	5709	1.60	3.30	2587	.80	.03

Note. Means for income reflect thousands of dollars. Sample sizes for the excluded adolescents differ by measure because excluded adolescents did not have complete data on all variables.

** $p < .01$.

selection criteria used to arrive at the final sample did not pose a threat to the validity of inferences that were made based on the results of this study.

Table 7 presents means and standard deviations for each variable used in this study. Information is presented separately for Mexican American and European American adolescents and for males and females within each ethnic group. Table 7 reveals that Mexican American families made approximately \$17,800 less than European American families in 1994. Levels of attachment to parents and emotional distress were comparable between Mexican American and European American adolescents. However, females reported higher levels of emotional distress than males. Overall, European Americans reported slightly higher rates of perceived peer substance use than Mexican Americans. However, when levels of perceived peer substance use are examined by ethnicity and gender, Mexican American males had the highest level followed by European American males and then by European American females. Mexican American females reported the lowest level of perceived peer substance use of all groups. Levels of delinquency were higher for males than females within each ethnic group. Rates of delinquency between ethnic groups are explored further in the next section.

Comparison of Rates of Delinquency by Ethnicity

Rates of delinquency for Mexican American and European American adolescents are presented in Tables 7 and 8. As can be seen in Table 7, Mexican Americans reported higher levels of delinquency during the year prior to being interviewed ($M = 2.5$ at Time 1 and $M = 2.0$ at Time 2) than European Americans

Table 7

Descriptive Statistics for Mexican American and European American Adolescents

Measure	Mexican American						European American					
	Males		Females		Total		Males		Females		Total	
	(n = 354)		(n = 344)		(n = 698)		(n = 2819)		(n = 2890)		(n = 5709)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Income	31.70	32.50	34.10	46.70	32.80	33.90	50.60	51.20	50.70	47.00	50.70	49.10
Attachment to parents	3.40	.62	3.20	.81	3.30	.70	3.40	.51	3.30	.63	3.40	.58
Emotional distress	.74	.30	.81	.36	.78	.32	.75	.24	.81	.27	.78	.25
Perceived peer substance use	.86	1.10	.73	.93	.80	.99	.83	.88	.82	.88	.83	.89
Time 1 delinquency	2.90	5.20	2.10	4.20	2.50	4.90	2.10	3.40	1.30	2.60	1.70	3.10
Time 2 delinquency	2.30	3.90	1.70	3.20	2.00	3.60	1.80	3.20	1.20	2.40	1.50	2.80

Note. Means for income reflect thousands of dollars

($M = 1.7$ Time 1 and $M = 1.5$ at Time 2) . Interestingly, Mexican American females and European American males had very similar levels of delinquency at Time 1 ($M = 2.1$ and 2.1 , respectively) and at Time 2 ($M = 1.7$ and 1.8 , respectively).

Table 8 presents the results of chi-square tests and odds ratios to determine the level of statistical and practical significance of the differences between Mexican American and European American rates of delinquency. For these analyses different categories of delinquency were used as the dependent variable (see measures section of Chapter III). Using Wave I data, analyses revealed that Mexican American adolescents evidenced a significantly higher rate of delinquency than European American adolescents for all categories of delinquency. Specifically, 57% of Mexican Americans versus 47% of European Americans had committed at least one delinquent act in the year preceding data collection (12-month ever), $\chi^2 (1, N = 6407) = 19.89, p < .01$, 37% versus 26% had engaged in at least one form of more serious delinquency (12-month serious), $\chi^2 (1, N = 6407) = 27.84, p < .01$, and 3% versus .9% had engaged in delinquent behavior to a greater extent than 99% of adolescents in the total sample (12-month very serious), $\chi^2 (1, N = 6407) = 14.14, p < .01$. Odds ratios indicate that Mexican American adolescents are 1.5 times as likely as are European American adolescents to have committed at least one act of delinquency, 1.8 times as likely to have engaged in serious delinquency, and 3 times as likely to have engaged in very serious delinquency in the year prior to data collection.

Comparisons between Mexican American and European American rates of delinquency based on data collected at Wave II yielded similar findings with a few

Table 8

Chi-square Tests and Odd Ratios of Adolescents in Different Delinquency Categories by Ethnicity

Delinquency Category	Ethnicity		χ^2	Odds ratio
	Mexican (<i>n</i> = 698) %	European American (<i>n</i> = 5709) %		
Time 1				
12-month ever delinquency	57.0	47.0	19.89**	1.5
12-month serious delinquency	37.0	26.0	27.84**	1.8
12-month very serious delinquency	3.0	.9	14.14**	3.0
Time 2				
12-month ever delinquency	51.0	41.0	19.76**	1.5
12-month serious delinquency	18.0	11.0	26.35**	1.8
12-month very serious delinquency	.8	.9	.05	.9

** $p < .01$

notable exceptions. First, rates of delinquency tended to be lower at Wave II for both Mexican American and European American adolescents. The only exception was for European Americans in the category of 12-month very serious delinquency; the rate of 12-month very serious delinquency for these adolescents remained at .9% from Wave I to Wave II. Second, the difference between Mexican American and European American rates of 12-month very serious delinquency was not significant at Wave II, $\chi^2(1, N = 6407) = .05, p = .79$. This finding was due to the fact that the rate of 12-month very serious delinquency decreased from 3% to .8% from Wave I to Wave II for Mexican American adolescents, while it remained the same for European American adolescents.

In addition, results reveal that Mexican Americans were overrepresented in every category of delinquency at Wave I and II, with the exception of 12-month very serious delinquency obtained at Wave II. Specifically, Mexican Americans represented approximately 8% of the total sample yet they represented 10%, 12%, and 21% of all adolescent in the “12-month ever,” “12-month serious,” and “12-month very serious” categories of delinquency at Wave I, respectively. Similarly, they represented 10% and 13% of all adolescents in the “12-month ever” and “12-month serious” categories at Wave II; however, they only represented 7% of all adolescents in the “12-month very serious” category at Wave II. In contrast, European Americans were not over-represented in any category of delinquency at either Wave I or Wave II.

Test of the Psychosocial Strain Model

The central question of interest in this study was whether the psychosocial strain model depicted in Figure 1 could adequately explain delinquency of Mexican American adolescents. The intercorrelations of the major variables in the model are shown in Table 9. The correlation matrix reveals small to moderate correlations across variables with a range from $-.01$ to $.36$ for females and $-.05$ to $.34$ for males. Regression results for the model are presented in Table 10. Figures 2 and 3 graphically present the same results.

Figure 2 displays path analysis results for the entire sample. At the first step in the model, the contemporaneous effect of SES on attachment to parents was not significant. The standardized path coefficient of $.05$ indicated that SES accounted for a very small amount of the variance in attachment to parents. At the second step, SES and

Table 9

Intercorrelations of Variables in the Psychosocial Strain Model

Variable	1	2	3	4	5
1. Socioeconomic status	—	.14	.13	-.05	-.10
2. Attachment to parents	-.01	—	-.22	-.22	-.10
3. Emotional distress	-.06	-.32	—	.22	.14
4. Perceived peer substance use	-.04	-.07	.28	—	.34
5. Delinquency (Time 2)	.03	-.02	.20	.36	—

Note. Correlations for males are listed above the diagonal and correlations for females are listed below the diagonal.

attachment to parents were entered into the regression equation as predictors of emotional distress and perceived peer substance use, separately. Together, SES and attachment to parents accounted for a small but statistically significant amount of the variance in emotional distress ($R^2 = .09, p < .01$). Of the two variables, however, only attachment to parents made a statistically significant contribution to the explanation of emotional distress ($\beta = -.30, p < .01$). SES and attachment to parents also accounted for a small but statistically significant amount of the variance in perceived peer substance use ($R^2 = .02, p < .05$). Again, however, only attachment to parents made a statistically significant contribution to perceived peer substance use ($\beta = -.12, p < .05$). Thus, the results suggested that SES was not a very meaningful variable in the model because it explained very little of the variance of the variables it was allowed to predict.

At the last step in the model, attachment to parents, emotional distress, and perceived peer substance use (all measured at Time 1) were used to predict the

Table 10

Standardized and Unstandardized Estimates of the Psychosocial Strain Model.

Independent variables	Dependent variables											
	Attachment to parents			Emotional distress			Perceived peer substance use			Delinquency		
	Males	Females	All	Males	Females	All	Males	Females	All	Males	Females	All
SES	.14* (.04)	-.01 (.005)	.05 (.01)	.17** (.02)	-.06 (-.01)	.05 (.006)	-.02 (-.01)	-.04 (-.02)	-.04 (-.02)	—	—	—
Attachment to parents	—	—	—	-.24** (-.12)	-.32** (-.14)	-.30** (-.14)	-.21* (-.17)	-.07 (-.10)	-.12* (-.17)	-.02 (-.11)	.04 (.15)	.02 (.12)
Emotional distress	—	—	—	—	—	—	—	—	—	.06 (.81)	.12 (1.10)	.08 (.85)
Perceived peer substance use	—	—	—	—	—	—	—	—	—	.33** (1.10)	.33** (1.10)	.33** (1.20)
R^2	.02*	.00	.00	.08**	.11**	.09**	.05*	.01	.02*	.12**	.14**	.13**

Note. Unstandardized estimates are listed in parentheses.

* $p < .05$. ** $p < .01$.

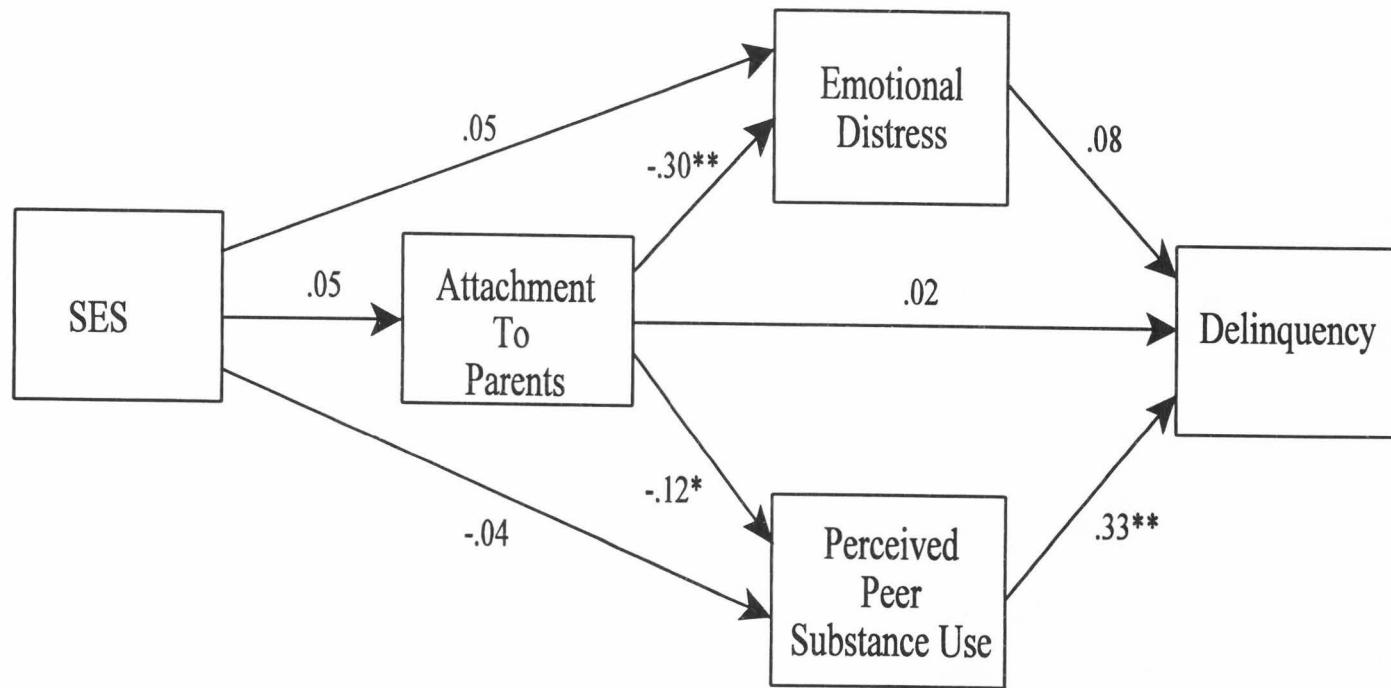


Figure 2. Standardize path coefficients for the psychosocial strain model for the entire sample of Mexican Americans. * $p < .05$. ** $p < .01$.

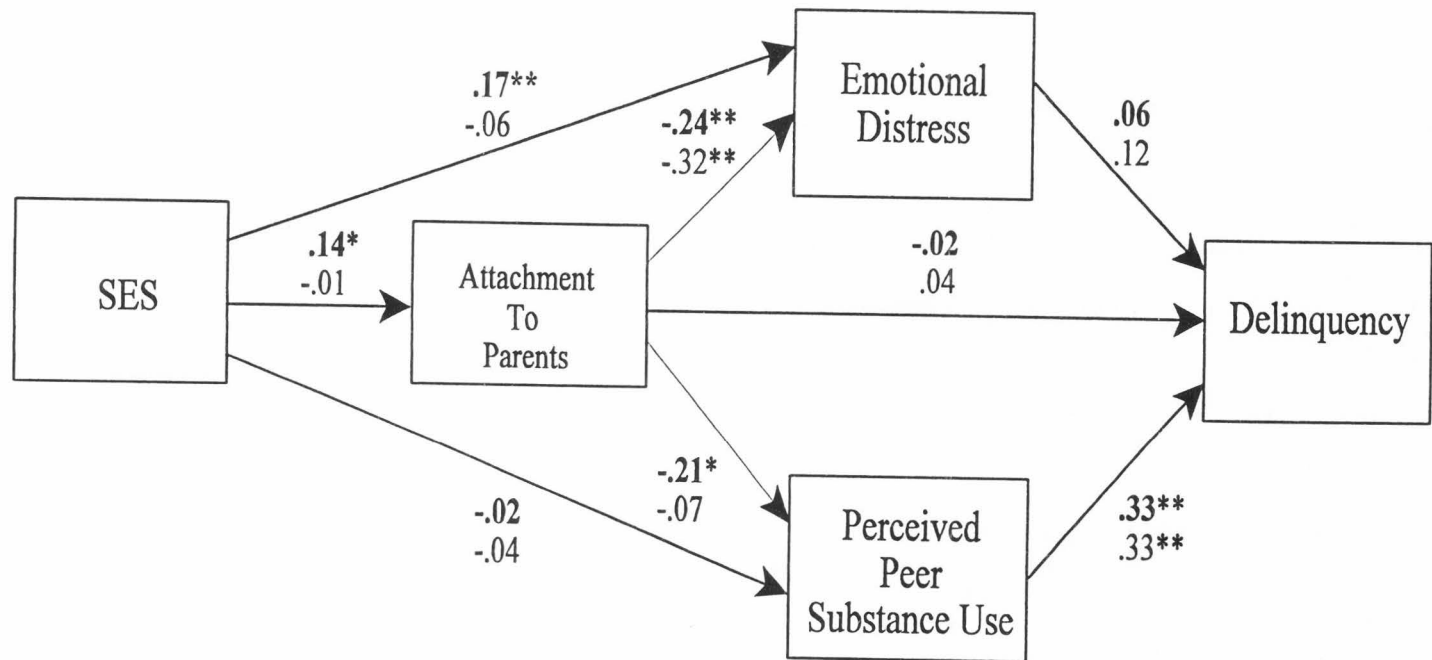


Figure 3. Standardized path coefficients for the psychosocial strain model for males and females separately. Top number represents coefficient for males and bottom number represents coefficient for females. * $p < .05$. ** $p < .01$.

delinquency scores of adolescents at Time 2. Together, these variables accounted for a moderate and statistically significant amount of the variance in delinquency ($R^2 = .13, p < .01$). However, examination of Figure 2 reveals that only the path from perceived peer substance use to delinquency was statistically significant ($\beta = .33, p < .01$).

Overall, the results indicated that the less Mexican American adolescents are attached to their parents, the more likely they are to report having delinquent peers, which in turn increases the likelihood that they themselves will engage in delinquent behavior. Attachment to parents also predicted emotional distress; with adolescents with lower levels of attachment to parents experiencing a greater degree of emotional distress. Neither emotional distress nor attachment to parents, however, demonstrated a direct relationship to delinquency. In addition, none of the SES paths were significant.

Test of the Psychosocial Strain Model by Gender

Separate path analyses were conducted to examine whether the relationships among the variables specified in the model differed by gender; these results are displayed in Figure 3 and Table 10. As can be gathered from examination of Figure 3, the separate path analyses revealed important gender differences that were obscured when the data was aggregated across gender.

Results for females will be discussed first. At the first step in the model, path analysis results showed that SES was not a significant predictor of attachment to parents for females ($\beta = -.01, p = .85$). At the second step, SES and attachment to parents together accounted for a small but statistically significant amount of the variance in

emotional distress ($R^2 = .11, p < .01$). However, only attachment to parents emerged as a significant predictor of emotional distress ($\beta = .32, p < .01$). In addition, neither SES nor attachment to parents was a significant predictor of perceived peer substance use ($\beta = -.02, p = .65$ and $\beta = -.04, p = .39$, respectively); together accounting for a small portion of the variance of this variable ($R^2 = .01, p = .64$). At the last step, attachment to parents, emotional distress, and perceived peer substance use (all measured at Time 1) accounted for a moderate and statistically significant amount of the variance in delinquency at Time 2 ($R^2 = .14, p < .01$). However, perceived peer substance use was the only predictor of delinquency to reach statistical significance ($\beta = .33, p < .01$). Path analysis results for females suggest that lower levels of attachment to parents are associated with higher levels of emotional distress; however there was no direct relationship between either emotional distress or attachment to parents and delinquency. Also, Mexican American females with a greater number of substance using peers were more likely to engage in delinquency.

A greater number of statistically significant paths emerged in the path analysis run for Mexican American males. At the first step in the model, SES was positively related to attachment to parents ($\beta = .14, p < .05$) and accounted for a small but statistically significant 2% of the variance in attachment to parents. At the second step, SES and attachment to parents together accounted for a statistically significant amount of the variance in emotional distress ($R^2 = .08, p < .01$). Unlike for females where only the path from attachment to parents was significant, the paths from SES and attachment to parents to emotional distress were both statistically significant for males ($\beta = .17, p < .01$ and

$\beta = -.24, p < .01$, respectively). Together, SES and attachment to parents also accounted for a small but statistically significant amount of the variance in perceived peer substance use for males ($R^2 = .05, p < .05$). However, only the path from attachment to parents was statistically significant ($\beta = -.21, p < .05$). At the last step in the model, only perceived peer substance use was a statistically significant predictor of delinquency ($\beta = .33, p < .01$). Thus, for Mexican American males the path analysis results suggested that a higher level of socioeconomic status was associated with a greater degree of attachment to parents. Mexican American male adolescents who had closer relationships with their parents, in turn, are less likely to associate with substance using peers and, as a result, were less likely to engage in delinquency. In addition, SES and attachment to parents were both statistically significant predictors of emotional distress for Mexican American males. However, whereas the relationship between attachment to parents and emotional distress was negative, the relationship between SES and emotional distress was positive. This finding suggested that Mexican American males from a higher socioeconomic status were more likely to experience emotional distress. Neither emotional distress nor attachment to parents were direct predictors of delinquency for males. Figures 4 and 5 show the psychosocial strain model separately for males and females with nonsignificant paths eliminated.

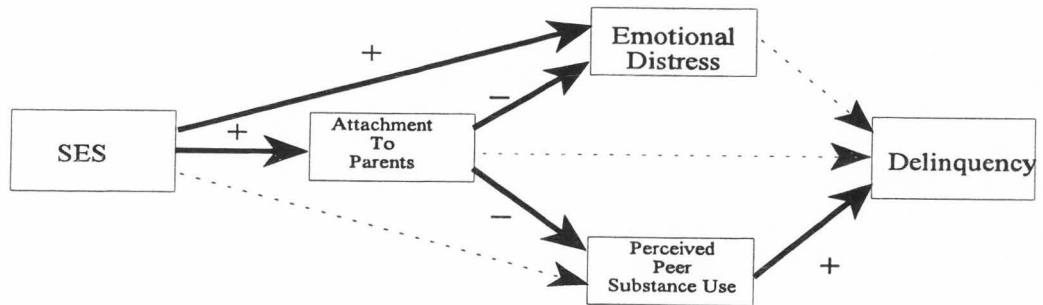


Figure 4. Psychosocial strain model with nonsignificant paths eliminated. Males only.

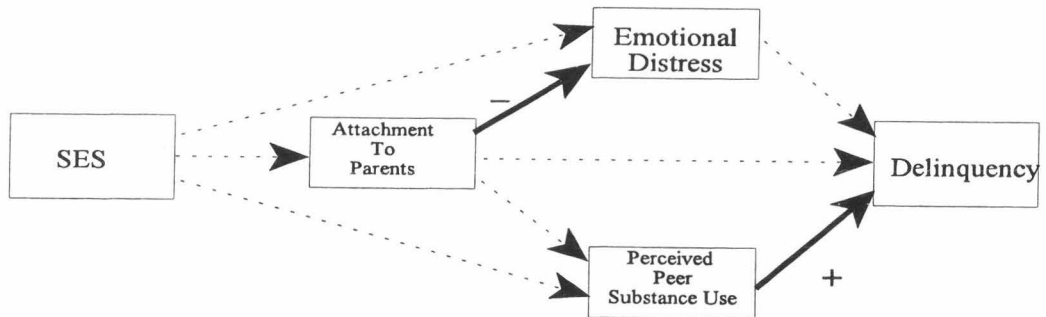


Figure 5. Psychosocial strain model with nonsignificant paths eliminated. Females only.

CHAPTER V

DISCUSSION

The purpose of this study was to evaluate the psychosocial strain model's ability to explain delinquency of Mexican American adolescents. An initial research question concerned the degree of involvement in delinquency by Mexican American adolescents. Results indicated that when compared with European American adolescents, Mexican American youth engaged in a disproportionate amount of delinquency. Further, Mexican American adolescents tended to engage in a more serious level of delinquency than European American adolescents. A particularly compelling finding was that Mexican American adolescents were three times as likely as European American adolescents to engage in a very serious level of delinquency when delinquency was measured at Wave I; the same finding, however, did not emerge when delinquency was measured at Wave II. These results expand on previous research findings demonstrating disproportionate rates of involvement in crime and delinquency by Latinos (Rodriguez, 1988; Valdez et al., 1988). In addition, they underscore the severity of the problem of delinquency among Mexican American adolescents.

The central question of this research study was whether the psychosocial strain model could adequately explain delinquency of Mexican American adolescents. To address this question the model was first tested without considering possible gender differences. The hypotheses that the model would explain a significant amount of the variance in delinquency and that each path in the model would make a significant contribution to the overall explanation of delinquency were only partially supported.

Although the variables entered in the last step of the model (i.e., attachment to parents, emotional distress, and perceived peer substance use) accounted for a meaningful amount of the variance in delinquency (13%), only one of these (i.e., perceived peer substance use) emerged as a statistically significant predictor. Further, only three of the eight path coefficients in the model reached statistical significance.

Nevertheless, several important findings emerged from the path analysis. Overall, the results indicated that parental attachment plays an important role in the explanation of delinquency of Mexican American adolescents. Specifically, the results suggested that adolescents with low levels of attachment to parents were more likely to report having substance using peers. In turn, adolescents with a greater number of substance using peers were more likely to be delinquents themselves. This finding is in line with a great deal of literature suggesting that familismo is an important Mexican American value and that breakdowns in the relationship between Latino adolescents and parents can predispose adolescents to delinquency (Falicov, 1983; Marin & VanOss Marin, 1990; Szapocznik et al., 1984). The results also indicated that Mexican American adolescents with lower levels of connectedness to their parents were more likely to experience emotional distress, although higher levels of emotional distress did not subsequently predict delinquency. This finding suggests that breakdowns in family functioning can have negative psychological effects on Mexican American adolescents; a finding that provides further support for the importance of family unity in the lives of Mexican Americans.

The final research question concerned the applicability of the model across gender

groups. Specifically, does the psychosocial strain model fit the data equally well for Mexican American males and females? Perhaps the most interesting findings of this study were those directly related to this question. Specifically, results for Mexican American males revealed that males with lower SES levels tended to have a lower level of attachment to their parents than males with higher SES levels. Adolescent males with lower attachment to parents were then more likely to report having substance using peers than males who had closer relationships with their parents. In turn, having more substance using peers was directly related to delinquency. Thus, for Mexican American males the results supported the hypothesis that strain is a key causal mechanism underlying delinquency. In other words, Mexican American males followed a successive path from economic strain, to familial strain, to associating with delinquent peers, to self-reported delinquency. Results for males also demonstrated that those adolescents with higher levels of SES but lower levels of attachment to parents exhibited a greater degree of emotional distress. However, emotional distress was not directly related to delinquency for Mexican American males.

Path analysis results for Mexican American females yielded only one statistically significant path to delinquency; a direct path from perceived peer substance use to delinquency. More specifically, Mexican American females who reported having a greater number of delinquent peers tended to engage in more delinquency than females who reported fewer delinquent peers. This finding was similar to that found for males and supported the hypothesis that peer delinquency would be a direct predictor of delinquency for both males and females. This finding also converged with the results of

numerous studies that indicated that peer delinquency was one of the best predictors of delinquency (e.g., Agnew, 1991; Elliot et al., 1985). Like the results for males, a direct relationship was also found between attachment to parents and emotional distress for females; however, the relationship was somewhat stronger for females. In addition, as was the case for males, the path from emotional distress to delinquency did not reach statistical significance for females.

Despite the above noted similarities, several important gender differences were observed for the psychosocial strain model. First, although the path from emotional distress to delinquency did not reach statistical significance for either males or females, emotional distress accounted for slightly more of the variance in delinquency for females. Further, the path coefficient from emotional distress to delinquency was close to reaching statistical significance for females but not for males. Taken together, these findings suggests that emotional distress may be a stronger predictor of delinquency for females than for males. Thus, there was some support for the hypothesis that the effects of emotional distress on delinquency would vary by gender. A possible explanation for this finding is that females are more vulnerable to emotional distress than males because of differences in the way boys and girls are socialized (Zahn-Waxler et al., 1991).

Second, in contrast to the findings for males, path analysis results failed to support the hypothesis that SES would be positively related to attachment to parents for females. Instead, no relationship was found between SES and attachment to parents for Mexican American females. This unexpected finding is somewhat difficult to explain as it is logical to expect that the negative effects of economic hardship on the parent-adolescent

relationship would be the same for males and females. To understand why this is so, it is important to consider the reasons why low SES would be expected to have disruptive effects on the parent-adolescent relationship in the first place. One potential explanation is because economic difficulties require parents to spend more time at work and less time with children, which limits parents' ability to form close relationships with their children. This being the case, however, there is no reason to expect that the amount of time that parents do spend with children would vary by the gender of the adolescent. A possible explanation for this finding may lie in the socialization practices of Mexican American parents. Some researchers have suggested that Latino parents tend to grant more independence to males than females, and that females may even be expected to fulfill parental duties (e.g., taking care of siblings) at an early age (Espin, 1999). Thus, engaging in parental behaviors at an early age may allow Mexican American females, relative to males, a greater ability to identify with the struggles faced by their parents as they attempt to balance different life demands. This increased perspective taking may facilitate a bond between Mexican American females and parents that is less vulnerable to the effects of economic hardship. This explanation is certainly consistent with the description of Mexican American women as *marianistas* (Davenport & Yurich, 1991).

Third, a statistically significant relationship between SES and emotional distress did not emerge for females, whereas for males the results demonstrated that higher SES was related to a greater degree of emotional distress. This finding for females stood in contrast to the findings of previous studies that have found a negative relationship between SES and emotional distress (Conger, Jewsbury-Conger, & Matthews, 1999;

Elder, Eccles, & Ardel, 1995).

A final difference to emerge from separate tests of the psychosocial strain model for males and females had to do with the relationship between attachment to parents and two of the variables it was allowed to predict. Specifically, whereas for males attachment to parents was related to both emotional distress and perceived peer substance use, for females it was only related to emotional distress. This suggests that for females strained relationships with parents do not lead to reporting a greater number of delinquent peers. One possible explanation for this finding is that strained relationships with parents may indeed push Mexican American adolescent females toward associating with delinquent peers, but the business of delinquency is still predominantly a male activity and gender stereotypes prevent females from infiltrating delinquent peer groups (Steffensmeier & Allan, 1996). Nevertheless, the results of this study suggested that for those Mexican American females who did manage to infiltrate delinquent peer groups, the influence of these groups was just as strong for them as it was for males.

Overall, the results of this study yielded important gender differences that seemed to be rooted in both general socialization differences and socialization differences that were specific to Mexican culture. When the model was tested without considering possible gender differences, important gender specific findings were masked. Although the findings did not provide unequivocal support for the model, the results did support the utility of the psychosocial strain model in explaining delinquency of Mexican American adolescents, especially for males.

The present study adds to the literature on delinquency in several important ways.

First, it is one of two studies that have attempted to develop a model designed to explain the delinquency of Mexican American adolescents by integrating knowledge from the general literature on delinquency and from the cultural practices of Mexican Americans into the model. While the model can be considered to be exploratory, it establishes an important foundation on which future research can build. Second, by integrating variables from different theoretical perspectives, this research acknowledges the complexity involved in understanding delinquent behavior and increases the likelihood that a more meaningful understanding of delinquency will be reached. Third, by incorporating a longitudinal design, the study adds to a growing body of literature that longitudinally examines factors that lead to delinquency among Latino adolescents.

The results of this study have some important implications for interventions designed to curtail delinquency among Mexican American youth. The most obvious implication is support for interventions that focus on strengthening parent-adolescent relationships such as the *bicultural effectiveness training* intervention developed by Szapocznik and his colleagues (Szapocznik et al., 1986). In addition, individual or group therapy interventions focused on reducing emotional distress may be an important component of treatment for Mexican American females exhibiting problems with delinquency. The results also suggest that the most effective treatments for Mexican American youth will likely target both macro- (e.g., poverty) and micro-level (e.g., distress) factors that lead adolescents to engage in delinquency.

Several limitations of this study should be noted. First, the delinquency measure used for this study was comprised of several different types of delinquency, including

violence, theft, and selling drugs. Although this measure may have increased the generalizability of study findings to different types of delinquency, it also may have obscured differences in the applicability of the psychosocial strain model to certain types of delinquent behavior. Loeber and Stouthamer-Loeber (1998), for example, suggested that different family processes may underlie violent and nonviolent delinquency. It is possible that if a measure of a specific type of delinquency (e.g., violence) had been used in this study, the psychosocial strain model would have accounted for more of the variance in delinquency. Thus, future studies should examine the applicability of the model to different types of delinquency.

Second, some research studies have found that the usefulness of certain predictors of delinquency varies depending on whether delinquency is measured as a prevalence or a frequency rate. Smith and Patternoster (1987), for example, found that level of family intactness, degree of parental supervision, and degree of attachment to peers, were all predictive of prevalence but not of frequency of marijuana use. The present study used a frequency measure of delinquency. Thus, different results from those obtained in this study may have emerged if the psychosocial strain model was used to explain *prevalence* rates of delinquency.

Third, the present study used a single item which asked about family income to measure SES. Although family income represents a common way of assessing SES, researchers seem to agree that a composite measure that includes income, educational level, and occupational status provides a better overall measure of SES than income alone (Bradley & Corwyn, 2002). Thus, the way in which SES was measured represents a

limitation in this study that may explain the limited explanatory power of SES in this study.

Finally, the present study relied on adolescents' reports of their friends' delinquent behavior. Some researchers have indicated that this method of assessing peer delinquency may exaggerate the importance of this variable because adolescents tend to project their own values and behaviors onto others. Aseltine (1995), for example, obtained information regarding peer delinquency directly from peers and found a weaker relationship between deviant peer behavior and delinquency than what had been typically found in previous studies; the relationship, however, was still significant. The work by Aseltine highlights a potential limitation in the way peer delinquency was measured in this study.

The findings of this study point to some directions for future research. Although a statistically significant amount of variance of delinquency was explained by the model for both males and females, a large portion of the variance was left unexplained. This suggests that the psychosocial strain model needs to be expanded. The three criteria used to construct the model should serve as a useful guide when deciding which additional variables to include in future tests of the model. A variable that was noticeably missing in the present study was acculturative stress. Among Latino adolescents, this variable has been demonstrated to be related to the disruption of the parent-adolescent relationship (Gil & Vega, 1996), to the development of emotional distress (Hovey & King, 1996), and to the development of delinquency (Vega et al., 1993). Thus, it is critical that future tests of the psychosocial strain model incorporate acculturative stress as a predictor variable in

the model. The Add Health study did not ascertain information about acculturative stress, which precluded inclusion of this variable in the present study. The findings of this study clearly indicated that future tests of psychosocial strain model, or any model of delinquency for that matter, should be conducted separately for males and females. Tests of models that include both males and females in the sample may obscure important gender-based differences and yield misleading results. Subsequent tests of the psychosocial strain model are also likely to benefit from comparisons of the model between Mexican American youth and adolescents from other ethnic groups.

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APPENDIX

ITEMS COMPRISING SCALES USED IN THE STUDY

Attachment to Parents (5 items per parent; measured at Wave I)

Attachment to Mother Only

Answers ranged from 0 (not at all) to 4 (very much)

1. How close do you feel to your mother.
2. How much do you think she cares about you.

Answers for the following items ranged from 0 (strongly disagree) to 4 (strongly agree)

3. Most of the time, your mother is warm and loving toward you.
4. You are satisfied with the way your mother and you communicate with each other.
5. Overall, you are satisfied with your relationship with your mother.

Attachment to Father Only

Answers ranged from 0 (not at all) to 4 (very much)

1. How close do you feel to your mother.
2. How much do you think she cares about you.

Answers for the following items ranged from 0 (strongly disagree) to 4 (strongly agree)

3. Most of the time, your mother is warm and loving toward you.
4. You are satisfied with the way your mother and you communicate with each other.
5. Overall, you are satisfied with your relationship with your mother.

Emotional Distress (19 items; measured at Wave I)

These questions will ask about how you feel emotionally and about how you feel in general. How often was each of the following things true during the past week? Answers ranged from 0 (never or rarely) to 3 (most of the time or all the time)

1. You were bothered by things that usually don't bother you.
2. You didn't feel like eating, your appetite was poor.
3. You felt that you could not shake off the blues, even with help from your family and your friends.
4. You felt that you were just as good as other people (reverse coded).
5. You had trouble keeping your mind on whatever you were doing.
6. You felt depressed.
7. You felt that you were too tired to do things.
8. You felt hopeful about the future (reverse coded).
9. You thought your life had been a failure.

10. You felt fearful.
11. You were happy (reverse coded).
12. You talked less than usual.
13. You felt lonely.
14. People were unfriendly to you.
15. You enjoyed life (reverse coded).
16. You felt sad.
17. You felt that people disliked you.
18. It was hard to get started doing things.
19. You felt like life was not worth living.

Peer Delinquency (3 items; measured at Wave I).

Of your 3 best friends, how many:
Answers ranged from 0 (none) to 3 (all three)

1. Smoke at least 1 cigarette a day?
2. Drink alcohol at least once a month?
3. Use marijuana at least once a month?

Delinquency (10 items; measured at Wave II)

In the past 12 months, how often did you:
Answers ranged from 0 (never) to 3 (5 or more times).

1. Paint graffiti or signs on someone else's property or in public place?
2. Deliberately damage property that didn't belong to you?
3. Take something from a store without paying for it?
4. Drive a car without its owner's permission?
5. Steal something worth more than \$50?
6. Go into a house or building to steal something?
7. Use or threaten to use a weapon to get something from someone?
8. Sell marijuana or other drugs?
9. Steal something worth less than \$50?
10. Take part in a fight where a group of friends was against another group?